

June 1, 2023

Via Federal Express

Jason E. Bowsza, First Selectman
Town of East Windsor
11 Rye Street
Broad Brook, CT 06016

Re: **Submission of Technical Information Concerning a Proposal to Construct a
Wireless Telecommunications Facility at 11 Chamberlain Road, East Windsor,
Connecticut**

Dear Mr. Bowsza:

This firm represents Cellco Partnership d/b/a Verizon Wireless (“Cellco”), in its proposal to construct a new wireless telecommunications facility in the northwest portion of a 10.9-acre parcel at 11 Chamberlain Road in East Windsor, Connecticut (the “Property”). The Property is owned by Nutrien Ag Solutions Inc. f/k/a Crop Production Services, Inc. and is used for light industrial purposes. Cellco identifies the proposed telecommunications facility as its “Broadbrook Relo Facility”.

Factual Background

Cellco currently maintains antennas and related equipment on an existing water tank in the southwest portion of the Property. Cellco identifies the existing cell site as its “Broadbrook Facility”. The water tank is used solely to support telecommunications equipment used and operated by Cellco, T-Mobile and Sprint, and no longer functions as a water storage structure.

In an effort to provide enhanced wireless service in East Windsor, Cellco is planning to make certain upgrades to its existing Broadbrook Facility, including the installation of new antennas and associated equipment. The water tank, however, is not structurally capable of supporting Cellco’s proposed facility upgrades. Cellco is therefore proposing to construct a new

Jason E. Bowsza, First Selectman
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tower on the Property. This new tower will require the approval of a Certificate of Environmental Compatibility and Public Need (“Certificate”) from the Connecticut Siting Council.

This Technical Report is submitted pursuant to Connecticut General Statutes (“Conn. Gen. Stat.”) § 16-50l(g), which establishes local input requirements for the siting of a wireless telecommunications facility under the exclusive jurisdiction of the Connecticut Siting Council (the “Council”). This statutory provision requires the submission of technical information to officials in the municipality where the proposed facility will be located and any municipality within 2,500 feet of the proposed facility location. There are no other municipalities within 2,500 feet of the proposed facility.

Correspondence and/or communications regarding the information contained in this report should be addressed to:

Alex Tyurin
Engineer III – RE/Regulatory
Cellco Partnership d/b/a Verizon Wireless
20 Alexander Drive
Wallingford, CT 06492

A copy of all such correspondence or communications should also be sent to Cellco’s attorneys:

Kenneth C. Baldwin, Esq.
Robinson & Cole LLP
280 Trumbull Street
Hartford, CT 06103-3597

Cellco intends to submit an application to the Council for a Certificate for the construction, maintenance and operation of a new wireless telecommunications facility at the Property. The Broadbrook Relo Facility will provide improved wireless service to residential, agricultural and industrial land uses in the area around the Property and will interact with Cellco’s existing cell sites in East Windsor, South Windsor, Ellington and Vernon. For orientation purposes, a Site Vicinity Map and a Site Schematic are included in Attachment 1. Included in Attachment 2 are coverage plots for antennas in each of Cellco’s operating frequencies (700 MHz; 850 MHz; 1900 MHz; and 2100 MHz). These plots show Cellco’s wireless service from the existing Broadbrook (water tank) Facility with the surrounding sites;

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Cellco's wireless service from the Broadbrook Relo Facility with the surrounding sites; and Cellco's wireless service from its surrounding sites alone without either the existing Broadbrook Facility or the Broadbrook Relo Facility.

Proposed Cell Site Information

Cellco proposes to construct a 120-foot tall monopole tower within a 50' x 50' fenced compound in the northeastern portion of the Property. Cellco would install antennas and remote radio heads on an antenna platform at the top of the tower. Equipment and battery cabinets and a diesel-fueled backup generator would be located on a concrete pad near the base of the tower within a fenced facility compound. Access to the proposed Broadbrook Relo Facility would extend from Chamberlain Road along a new gravel access driveway to the tower site. The access driveway has been designed to limit views of the tower compound from Chamberlain Road. Utility and fiber optic service to the tower site would extend from existing service along Chamberlain Road to the tower site along the proposed access driveway. Included in Attachment 3 is a set of project plans for the proposed Broadbrook Relo Facility.

Connecticut Siting Council Jurisdiction

Municipal jurisdiction over the siting of the proposed telecommunications facility described in this report is pre-empted by provisions of the Public Utilities Environmental Standards Act ("PUESA"), Conn. Gen. Stat. § 16-50g *et seq.* The PUESA gives exclusive jurisdiction over the location, type and modification of telecommunications towers, to the Council (Conn. Gen. Stat. § 16-50x(a); 16-50i(a)(6)). Accordingly, the telecommunications facility described in this report is exempt from the Town's land use (zoning and inland wetlands) regulations.

Upon receipt of an application, the Council will assign a docket number and, following a completeness review, set the schedule for the docket, including a hearing date. At that time, the Town of East Windsor may choose to become an intervenor or party in the proceeding. Other procedures followed by the Council include serving the applicant and other participants with interrogatories, holding a pre-hearing conference, and conducting a public hearing. Following the public hearing, the Council will issue findings of fact, an opinion and a decision and order. Prior to construction, the Council will also require the Applicant to submit a development and management plan ("D&M Plan") which is, in essence, a final site development plan showing the details of the facility, incorporating any conditions imposed by the Council. These procedures are also outside the scope of the Town's jurisdiction and are governed by the Connecticut General Statutes, the Regulations of Connecticut State Agencies, and the Council's Rules of

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Practice. If the Council approves the cell site described in this report, Cellco will submit to the Building Official an application for approval of a local building permit. Under Section 16-50x of the General Statutes, which provides for the exclusive jurisdiction of the Council, the building official must honor the Council's decision.

Municipal Consultation Process

Pursuant to Section 16-50l of the General Statutes, Town officials are entitled to receive technical information regarding the proposed telecommunications facility at least ninety (90) days prior to the filing of an application with the Council. This Technical Report is provided to the Town of East Windsor in accordance with these provisions and includes information on the need for improved reliable wireless service in the area; the location of existing wireless facilities in and around the area; details of the proposed facility; the location of alternative sites considered and rejected; the location of schools and commercial day care facilities in the area and the aesthetic impacts of the facility on those schools and day care facilities, if any; a description of the site selection process; and a discussion of potential environmental effects associated with the proposed facility.

Not later than sixty (60) days after the initial consultation meeting, the municipality may, in cooperation with Cellco, hold a public information hearing on the facility proposal. If such a hearing is held, the Applicant must notify all abutting landowners and publish notice of the hearing in a newspaper of general circulation in the municipality, at least fifteen (15) days prior to the hearing.

Not later than thirty (30) days after the initial consultation meeting, the municipality may present the prospective applicant with alternative sites, including municipal parcels, for its consideration. If not previously considered, these alternatives will be evaluated and discussed in its application to the Council.

Pursuant to Section 16-50l(e) of the General Statutes, Cellco must provide a summary of any comments and/or recommendations received to the Council within fifteen (15) days of the filing of an application.

Need for the Proposed Wireless Facility

The Broadbrook Relo Facility is needed so that Cellco can provide enhanced wireless service (coverage) in eastern portions of East Windsor. Like the existing Broadbrook Facility,

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the proposed Broadbrook Relo Facility will interact with Cellco's existing macro cell facilities identified on the coverage plots as South Windsor North, East Windsor North, East Windsor 2, East Windsor, Ellington DT and Vernon 3. (See Attachment 2).

Environmental Effects

In our experience, the primary impact of a wireless facility such as the proposed Broadbrook Relo Facility is visual. The visual impact of the proposed Broadbrook Relo Facility tower will vary from place to place around the site location, depending upon factors such as vegetation, topography, distance from the tower, and the location of buildings or other structures (utility infrastructure) in the sight-line of the cell site.

To more fully assess the visual impact of the Broadbrook Relo Facility, Cellco's consultant, All-Points Technology Corporation ("APT") has prepared a Preliminary Visual Assessment for the proposed tower location. This preliminary assessment indicates that a majority of the year-round visibility of the proposed tower would be limited to an approximately 78-acre area within a two-mile radius of the proposed tower site. The proposed tower may also be visible, through existing vegetation (so-called "seasonal views") from 276 acres within two-miles of the tower site. A more detailed visual assessment, including photosimulations of the tower, is being prepared and will be included in Cellco's Certificate application to the Council. (See Attachment 4).

Pursuant to the provisions of Conn. Gen. Stat. § 16-50p(a)(3)(G), new telecommunications facilities must be located at least 250 feet from buildings containing schools (defined in C.G.S. §10-154a) and commercial day care facilities (defined in C.G.S. §19a-77(a)(1)) unless the location selected is acceptable to the Town's chief elected official or the Council finds that the facility will not have a substantial adverse effect on the aesthetics or scenic quality of the neighborhood where the school or commercial day care use is located. The proposed Broadbrook Relo Facility is not located within 250 feet of any building containing a school or commercial day care facility.

Based on field surveys, Cellco has determined that the construction of the Broadbrook Relo Facility will have no direct impact on inland wetlands or watercourses, near the tower compound. Cellco anticipates that all other physical environmental effects associated with the proposed facility would be minimal.

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Radio Frequency Emissions

The Federal Communications Commission (“FCC”) has adopted a standard (the “Standard”) for exposure of radio frequency (“RF”) emissions from telecommunications base stations like the Broadbrook Relo Facility. To ensure compliance with the Standard, Cellco has prepared a Far Field RF emissions calculation for the proposed facility according to the methodology described in FCC Office of Science and Technology Bulletin No. 65 (“OST Bulletin 65”). The calculated Far Field RF emissions level for the proposed 120-foot tower would be 6.1% of the FCC Standard. (See Attachment 5).¹

Scenic Natural Historic or Recreational Impacts

To further assess the environmental impacts of the proposed facility, Cellco will be working with its consultant team to prepare a National Environmental Policy Act (“NEPA”) Environmental Screening Checklist (the “NEPA Checklist”) and other related environmental reviews to determine if the facility will have any significant adverse environmental effects. The NEPA Checklist will include information from the Environmental and Geographic Information Center of the Connecticut Department of Energy and Environmental Protection (“DEEP”), the U.S. Fish and Wildlife Service (“USFWS”) and the State Historic Preservation Officer (“SHPO”). Copies of the DEEP, USFWS and the SHPO determinations will also be submitted as a part of the Council’s Certificate Application.

Site Search Process

Cellco’s site search was initially and primarily focused on the Property as the preferred location. The Property Owner was amendable to the proposed facility relocation as described above making the search for an alternative location unnecessary.

Tower Sharing

As stated above, Cellco intends to build a tower that is capable of supporting its antennas and those of other wireless telecommunications providers, the Town of East Windsor, and emergency service providers, if a need exists. The provision to share the tower is consistent with the intent of the General Assembly when it adopted Conn. Gen. Stat. § 16-50aa and with Council policy. The availability of space on the proposed tower may reduce, if not eliminate, the need

¹ If T-Mobile and Sprint relocated to the new tower site a new RF Emission calculation would be prepared and submitted to the Council taking into consideration all carriers on the monopole.

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for additional towers in the area for the foreseeable future.

Conclusion

This Technical Report is submitted in accordance with Conn. Gen. Stat. § 16-50~~l~~ which requires Cellco to supply the Town of East Windsor with information regarding its proposed Broadbrook Relo Facility. This report includes information regarding the site selection process, public need, and the potential environmental impacts of the facility. Cellco submits that its proposed Broadbrook Relo Facility would not have any significant adverse environmental effects. Moreover, Cellco submits that the public need for high quality wireless service, and a competitive framework for providing such service has been determined by the FCC to be in the public interest and that such public need far outweighs any perceived environmental effects of the proposed facility.

Please contact me if you have any additional questions regarding the proposed facility.

Sincerely,



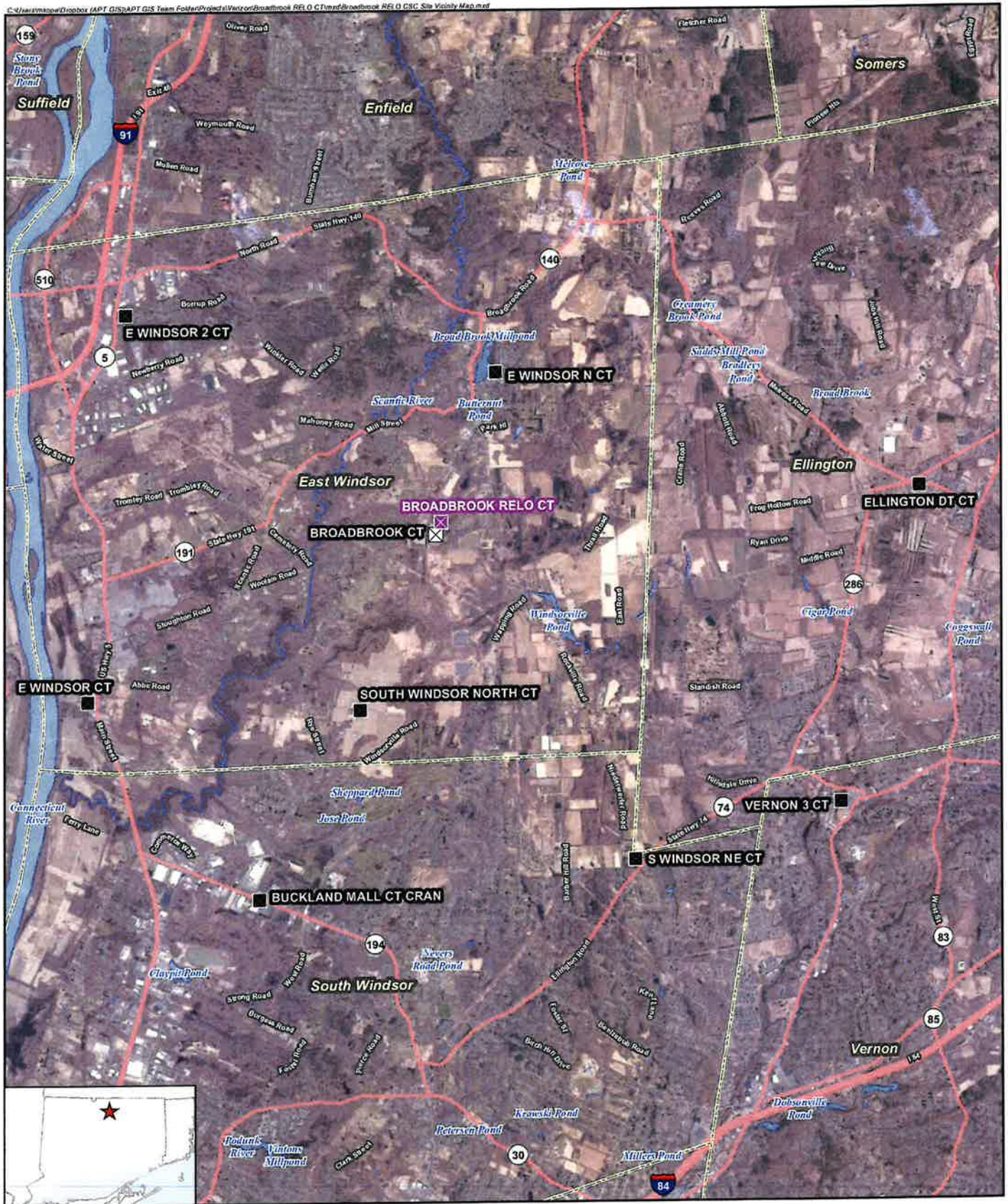
Kenneth C. Baldwin

Enclosures

Copy to:

Michael Kowalski, Chair, East Windsor Plan & Zoning Commission
Rebecca Talamini, Chairman, East Windsor Inland Wetlands & Water Courses Agency
Alex Tyurin, Verizon Wireless
Mark Brauer, Verizon Wireless

ATTACHMENT 1

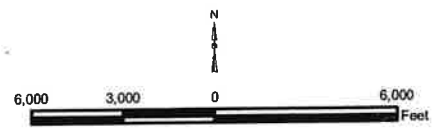


- Legend**
- X Proposed Verizon Wireless Facility
 - Surrounding Verizon Wireless Facilities
 - ⊗ Existing Verizon Wireless Facility to be Removed
 - Municipal Boundary

Site Vicinity Map
 Proposed Wireless Telecommunications Facility
 Broadbrook RELO CT
 11 Chamberlain Road
 East Windsor, Connecticut






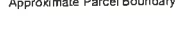


Base Map Source: 2019 Aerial Photograph (CTECO)
 Map Scale: 1 inch = 6,000 feet
 Map Date: April 2023





Legend

-  Proposed Verizon Wireless Lease Area
-  Proposed Verizon Wireless Compound
-  Proposed Verizon Wireless Equipment
-  Proposed Verizon Wireless Gravel Access Drive
-  Subject Property
-  Approximate Parcel Boundary

Site Schematic

Proposed Wireless
Telecommunications Facility
Broadbrook RELO CT
11 Chamberlain Road
East Windsor, Connecticut

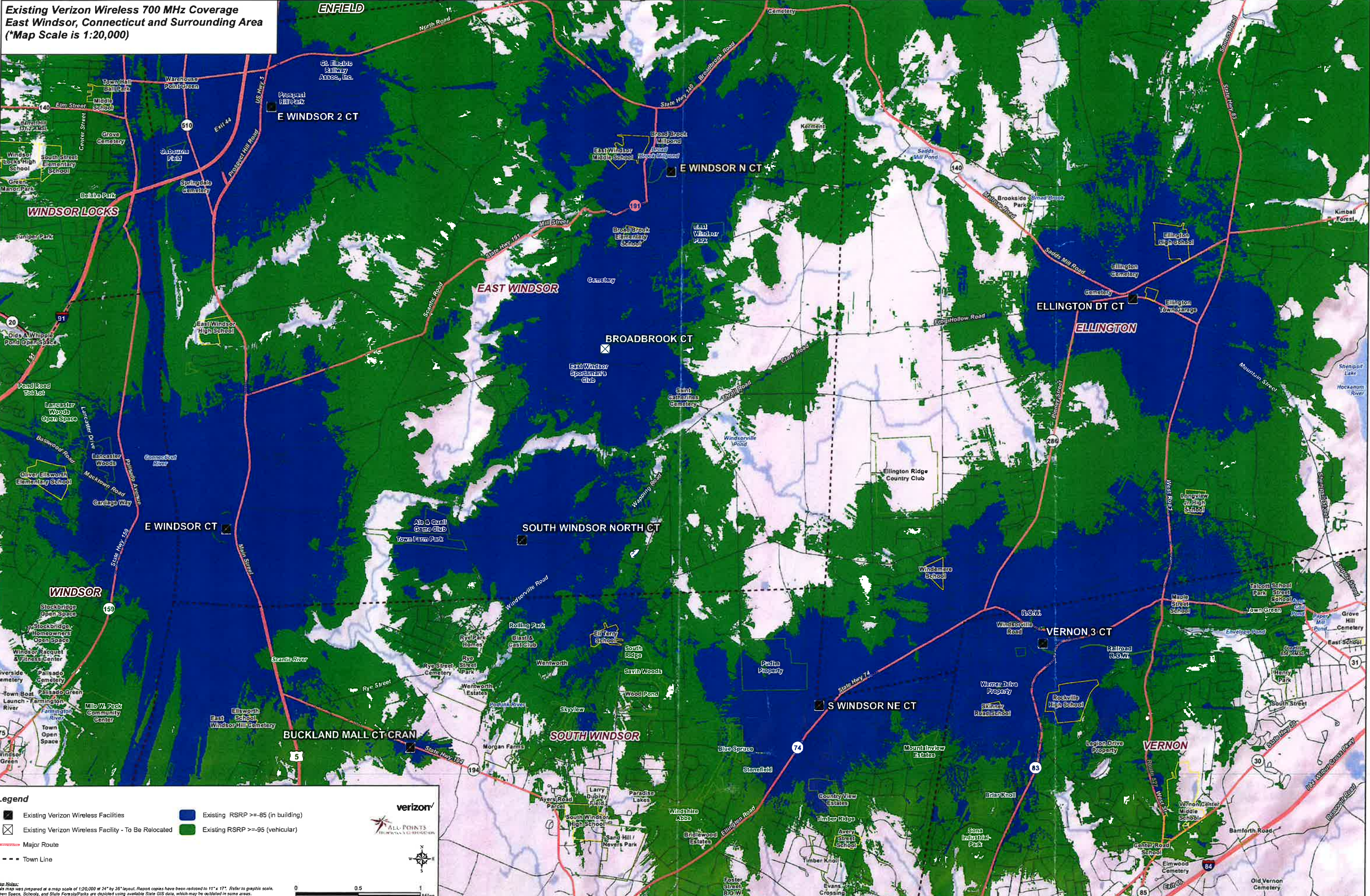


Map Notes:
Base Map Source: 2019 CT Aerial Imagery (CTECO)
Map Scale: 1 inch = 200 feet
Map Date: April 2023



ATTACHMENT 2

**Existing Verizon Wireless 700 MHz Coverage
East Windsor, Connecticut and Surrounding Area
(*Map Scale is 1:20,000)**



Legend

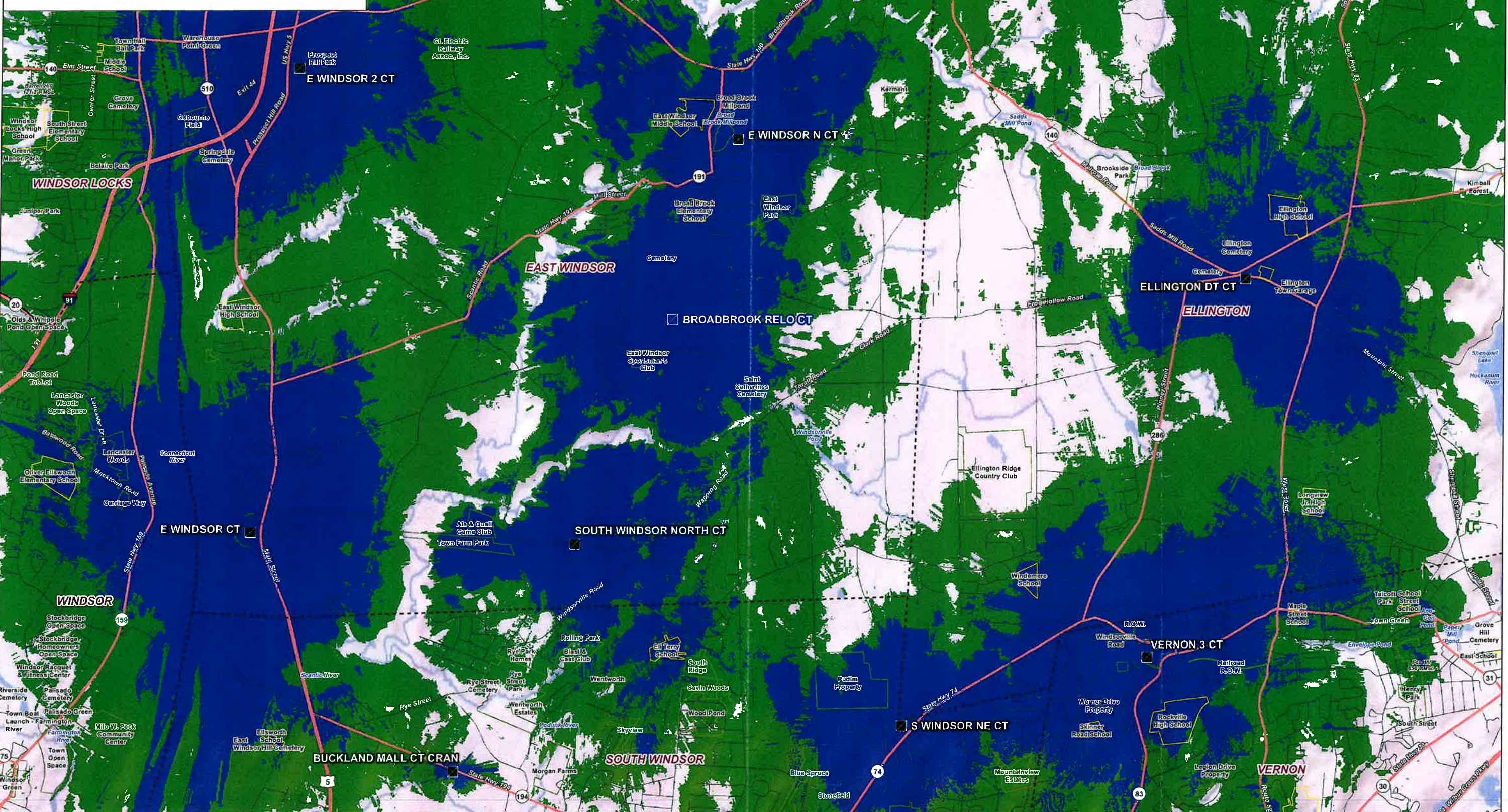
- Existing Verizon Wireless Facilities
- Existing RSRP >= -85 (in building)
- Existing RSRP >= -95 (vehicular)
- Existing Verizon Wireless Facility - To Be Relocated
- Major Route
- Town Line

verizon
ALL POINTS
THROUGHOUT THE COUNTRY

Map Notes:
This map was prepared at a map scale of 1:20,000 at 24" by 36" layout. Report copies have been reduced to 11" x 17". Refer to graphic scale.
Open Space, Schools, and State Forests/Parks are depicted using available State GIS data, which may be outdated in some areas.
Base map: ESRI Shaded Relief

0 0.5 1 Miles

**Existing and Proposed Verizon Wireless 700 MHz Coverage
East Windsor, Connecticut and Surrounding Area
(*Map Scale is 1:20,000)**



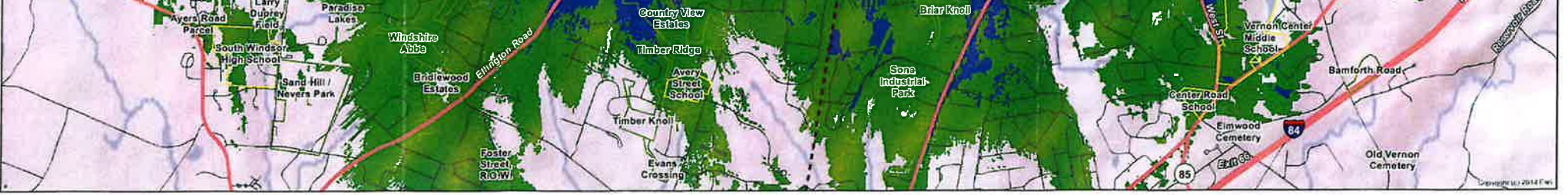
Legend

- Proposed Verizon Wireless Facility
- Existing and Proposed RSRP >= -85 (in building)
- Existing Verizon Wireless Facilities
- Existing and Proposed RSRP >= -95 (vehicular)
- Major Route
- Town Line

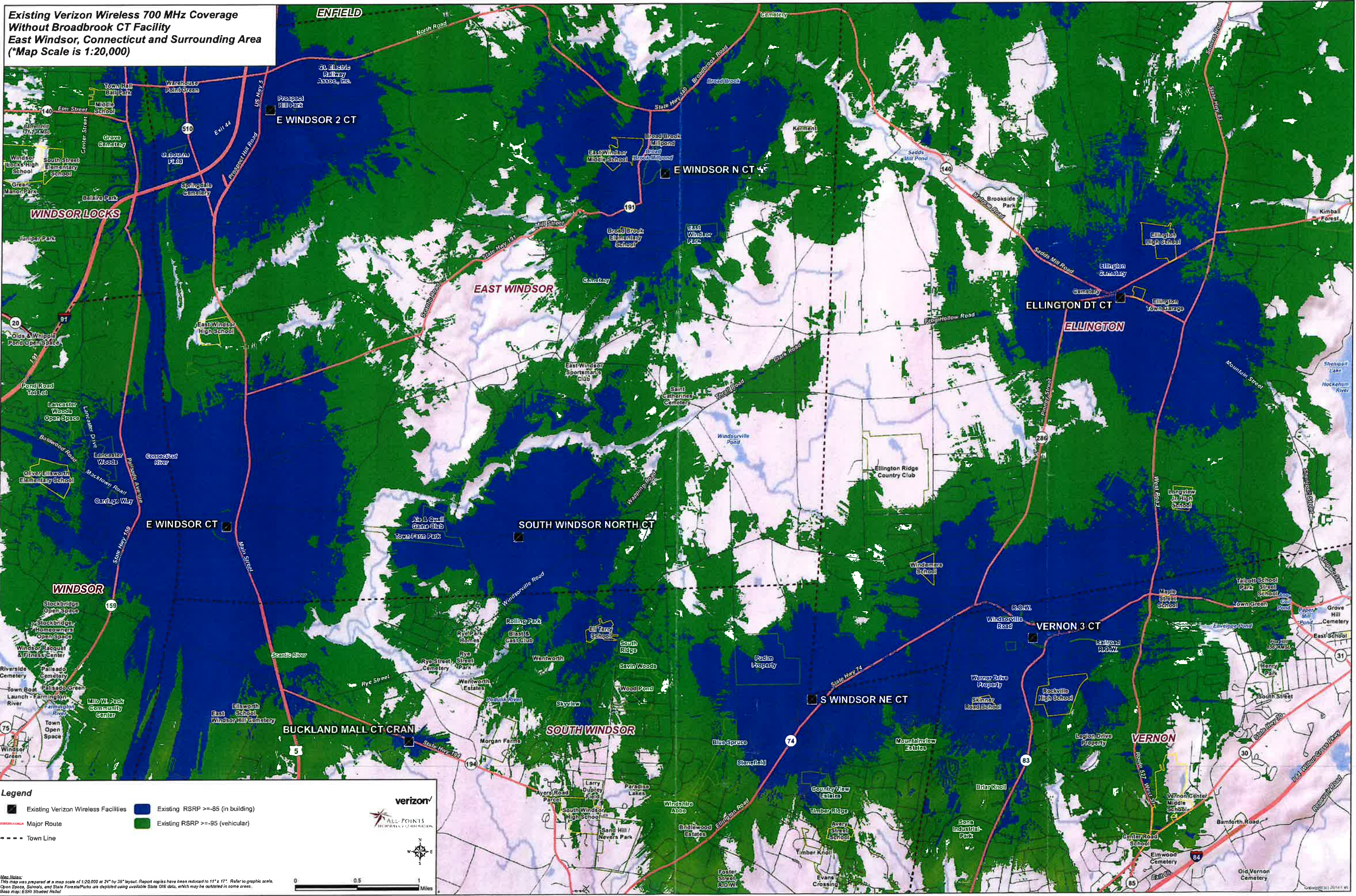
Map Notes:
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Scale: 0 0.5 1 Miles

Verizon ALL-POINTS
FLEXIBLE INTEGRATION



**Existing Verizon Wireless 700 MHz Coverage
Without Broadbrook CT Facility
East Windsor, Connecticut and Surrounding Area
(*Map Scale is 1:20,000)**



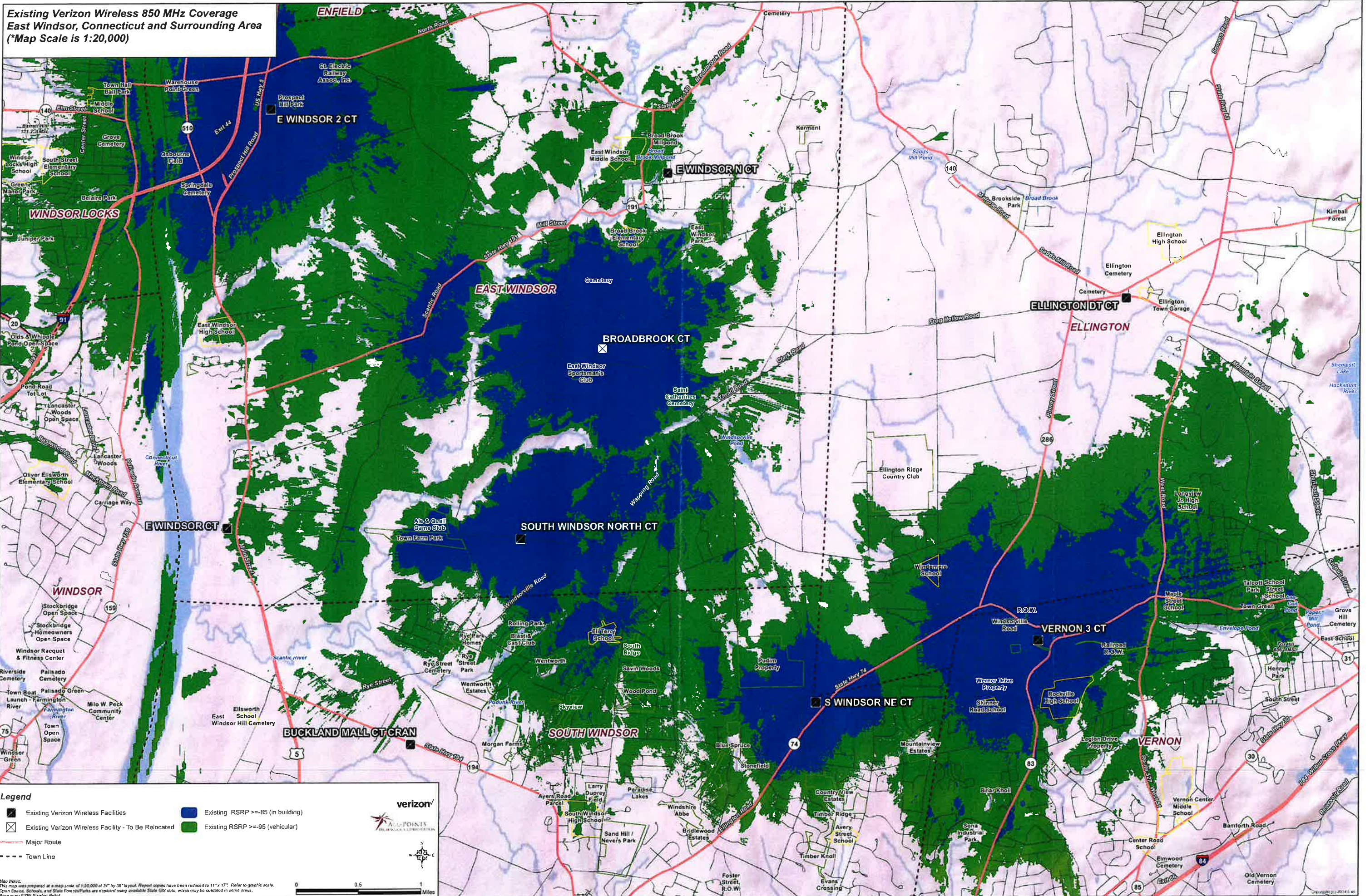
Legend

- Existing Verizon Wireless Facilities
- Existing RSRP >= -85 (in building)
- Existing RSRP >= -95 (vehicular)
- Major Route
- Town Line

ALL POINTS
THE POWER OF CONNECTION

Map Notes:
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 Base map: ESRI Street Relief

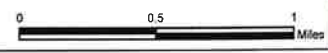
**Existing Verizon Wireless 850 MHz Coverage
East Windsor, Connecticut and Surrounding Area
(*Map Scale is 1:20,000)**



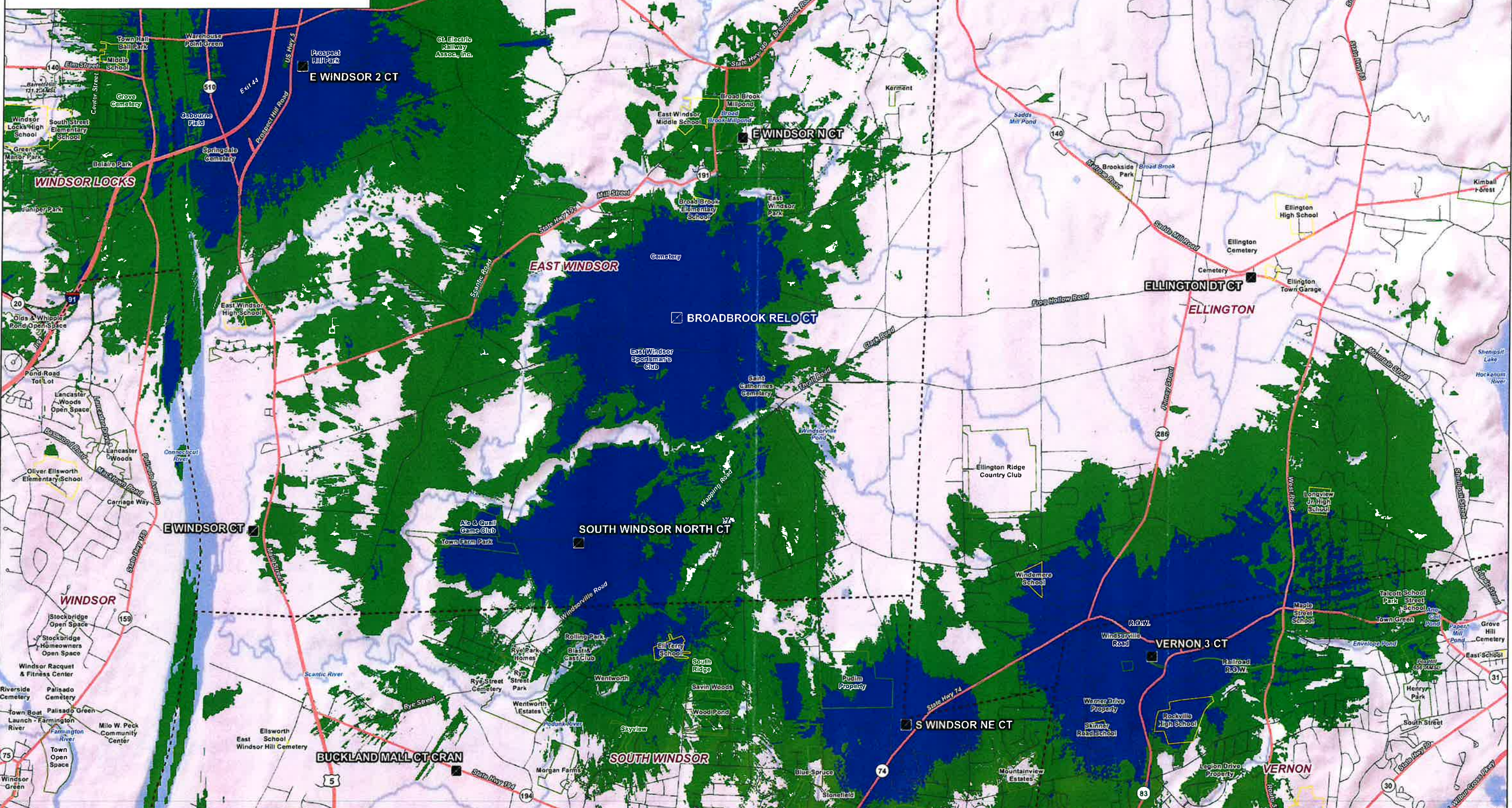
- Legend**
- Existing Verizon Wireless Facilities
 - Existing Verizon Wireless Facility - To Be Relocated
 - Existing RSRP >= -85 (in building)
 - Existing RSRP >= -95 (vehicular)
 - Major Route
 - Town Line



Max. build: This map was prepared at a map scale of 1:20,000 at 24" by 35" layout. Report copies have been reduced to 11" x 17". Refer to graphic scale. Open Space, Schools, and State Forest/Parks are depicted using available State GIS data, which may be outdated in some areas. Base map: ESRI StreetView


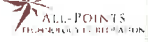

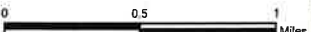


**Existing and Proposed Verizon Wireless 850 MHz Coverage
East Windsor, Connecticut and Surrounding Area
(*Map Scale is 1:20,000)**



Legend

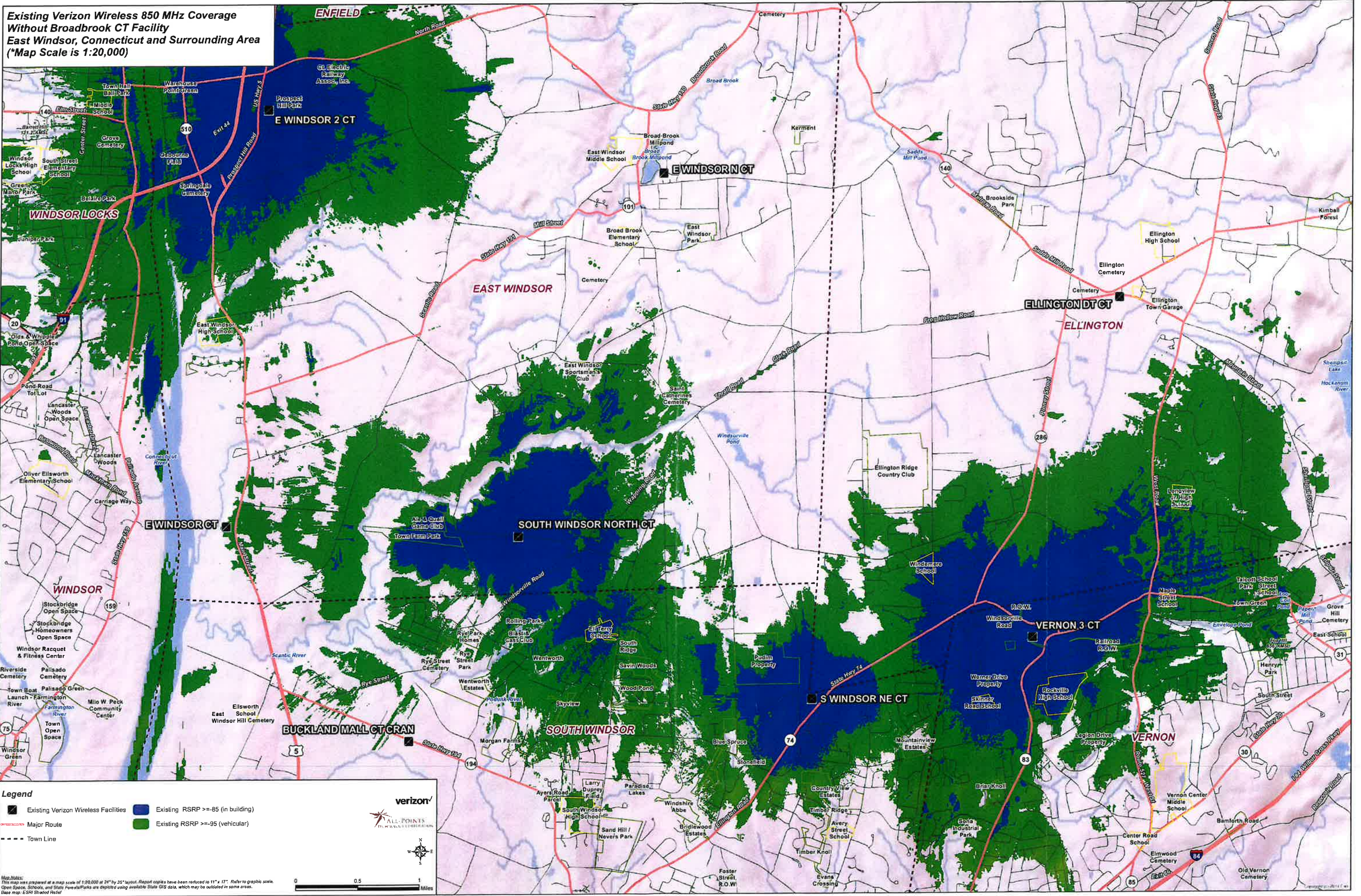
- Proposed Verizon Wireless Facility
- Existing and Proposed RSRP >= -85 (in building)
- Existing Verizon Wireless Facilities
- Existing and Proposed RSRP >= -95 (vehicular)
- Major Route
- - - Town Line

Map Notes:
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Open Space, Schools, and State Forest/Parks are depicted using available State GIS data, which may be outdated in some areas.
Base map: ESRI Street Map

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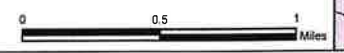
**Existing Verizon Wireless 850 MHz Coverage
Without Broadbrook CT Facility
East Windsor, Connecticut and Surrounding Area
(*Map Scale is 1:20,000)**



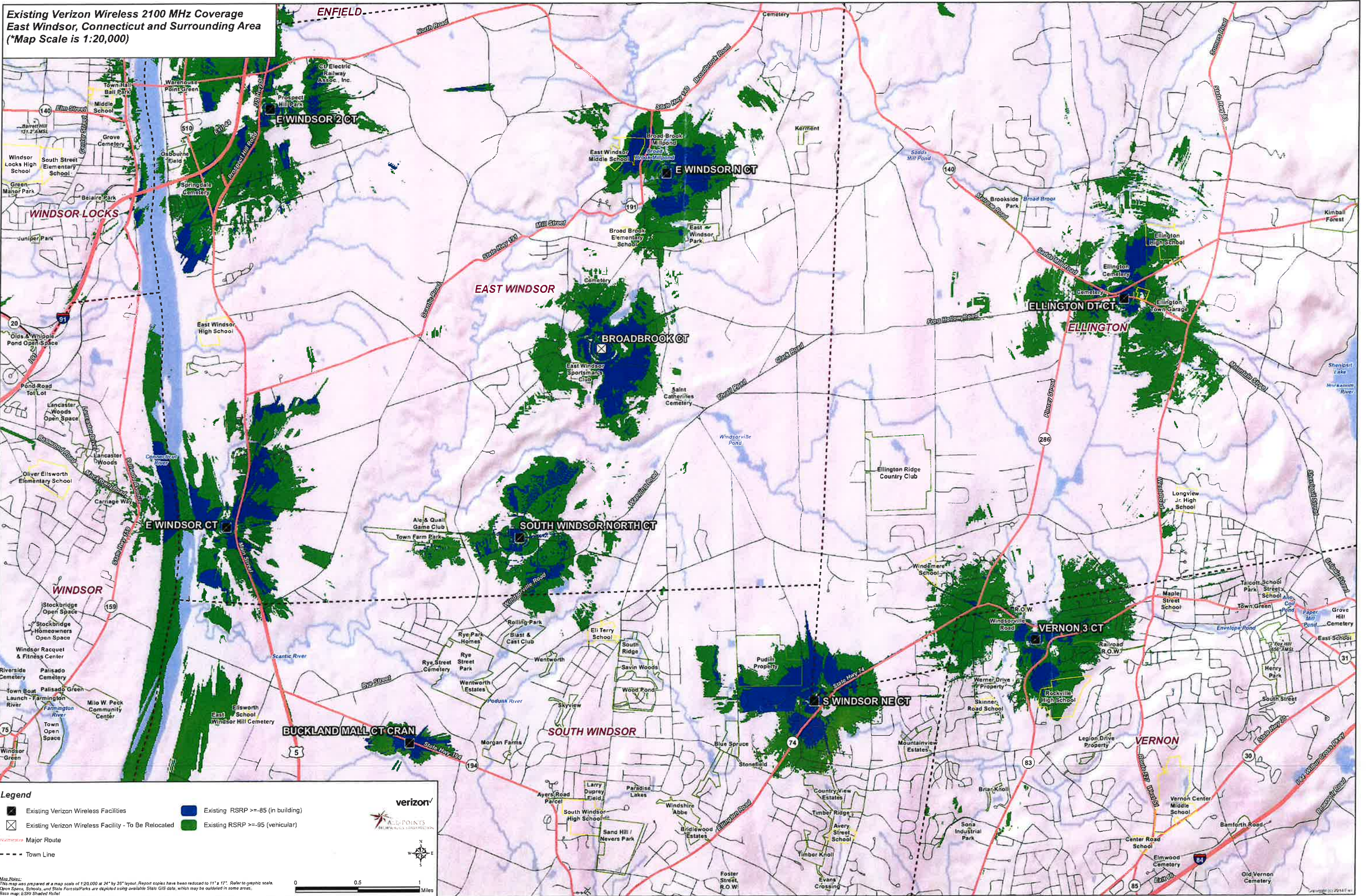
- Legend**
- Existing Verizon Wireless Facilities
 - Existing RSRP >= -85 (in building)
 - Existing RSRP >= -95 (vehicular)
 - Major Route
 - Town Line



Map Notes:
This map was prepared at a map scale of 1:20,000 at 24" by 35" layout. Report circles have been reduced to 11" x 17". Refer to graphic scale.
Open Space, Schools, and State Forests/Parks are depicted using available State GIS data, which may be outdated in some areas.
Base map: ESRI Shaded Relief



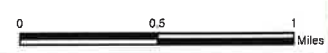
**Existing Verizon Wireless 2100 MHz Coverage
East Windsor, Connecticut and Surrounding Area
(*Map Scale is 1:20,000)**



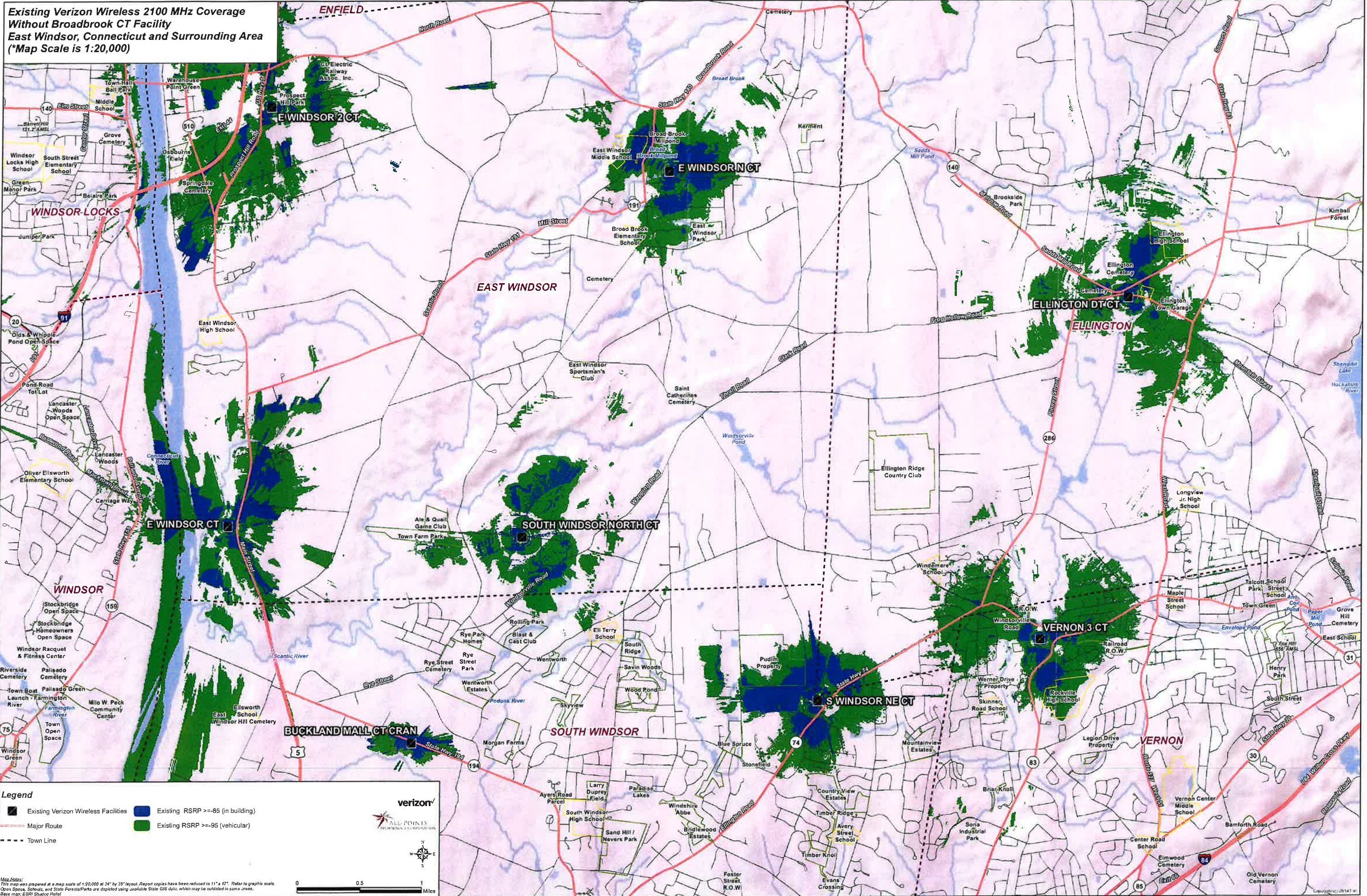
- Legend**
- Existing Verizon Wireless Facilities
 - Existing RSRP >= .85 (in building)
 - Existing Verizon Wireless Facility - To Be Relocated
 - Existing RSRP >= .95 (vehicular)
 - Major Route
 - Town Line



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Open Spaces, Schools, and State Forests/Parks are depicted using available State GIS data, which may be outdated in some areas.
Base map: ESRI Shaded Relief

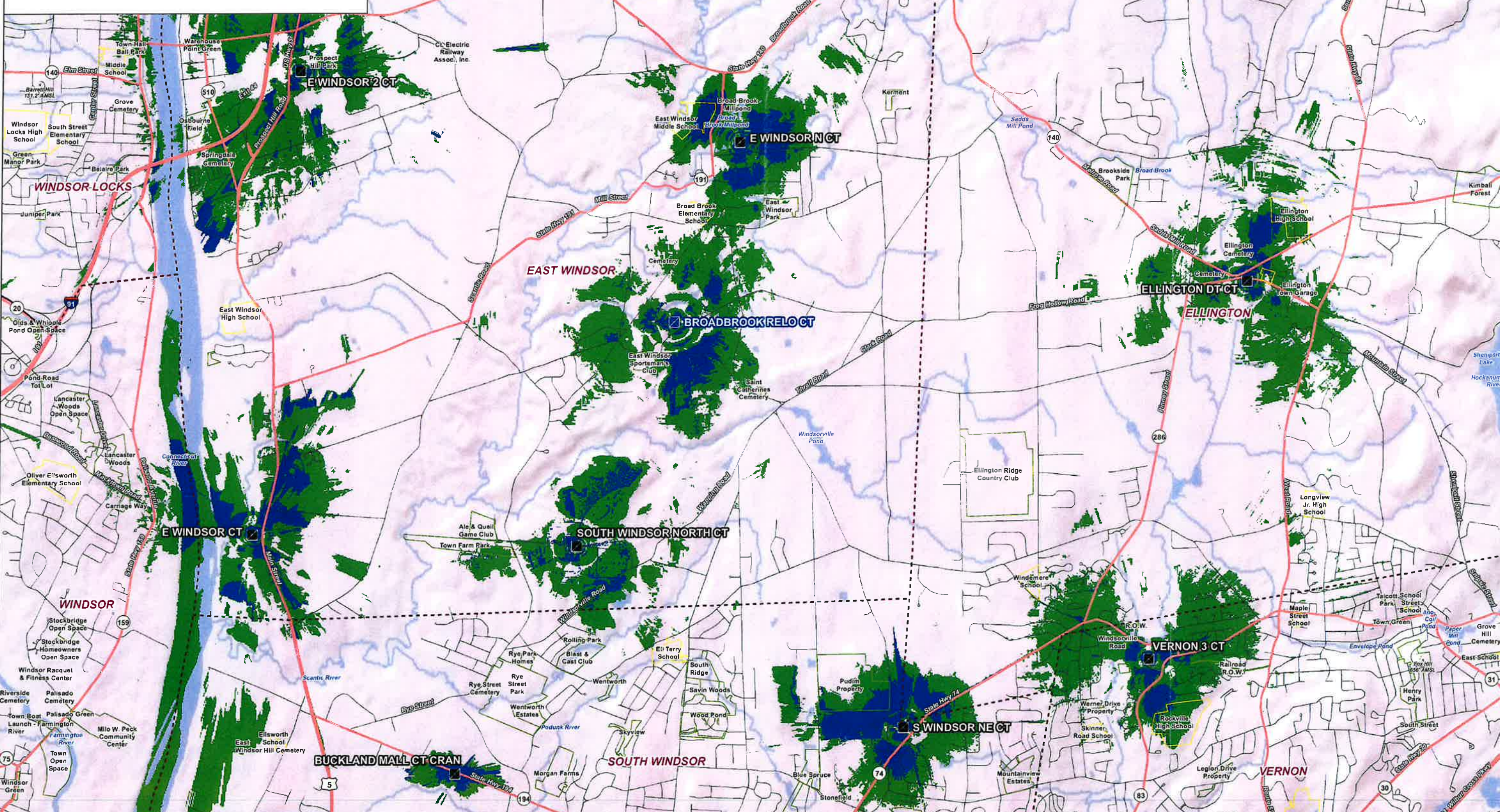


**Existing Verizon Wireless 2100 MHz Coverage
Without Broadbrook CT Facility
East Windsor, Connecticut and Surrounding Area
(*Map Scale is 1:20,000)**



Map Notes:
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Base map: ESRI Shaded Relief

**Existing and Proposed Verizon Wireless 2100 MHz Coverage
East Windsor, Connecticut and Surrounding Area
(*Map Scale is 1:20,000)**



Legend

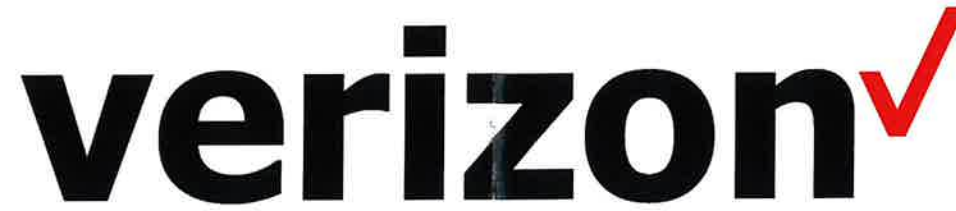
- Proposed Verizon Wireless Facility
- Existing and Proposed RSRP >= -85 (in building)
- Existing Verizon Wireless Facilities
- Existing and Proposed RSRP >= -95 (vehicular)
- Major Route
- - - Town Line

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Base map: ESRI Shaded Relief

verizon
ALL-POINTS
DIGITAL LOCATION INFORMATION

0 0.5 1 Miles

ATTACHMENT 3



WIRELESS COMMUNICATIONS FACILITY

BROADBROOK RELO CT

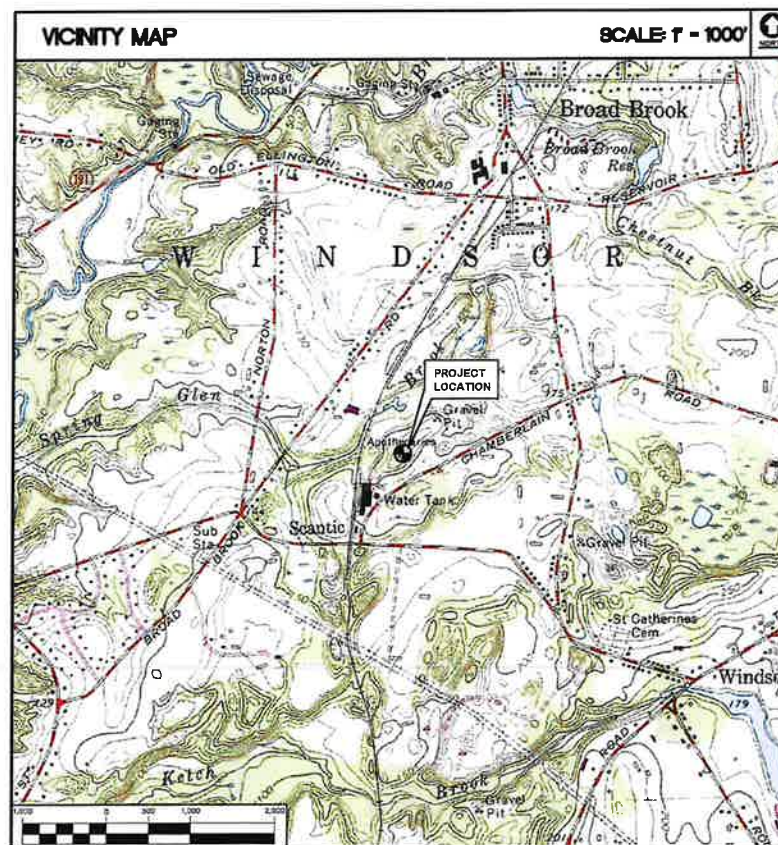
11 CHAMBERLAIN RD

EAST WINDSOR, CT 06016

SITE INFORMATION

THE SCOPE OF WORK SHALL GENERALLY INCLUDE:

1. THE CONSTRUCTION OF A 50'x50' FENCED COMMUNICATIONS COMPOUND WITH DOUBLE 6' WIDE ACCESS GATE WITHIN A 100'x100' LEASE AREA.
2. A TOTAL OF NINE (9) DIRECTIONAL PANEL ANTENNAS ARE PROPOSED TO BE MOUNTED AT A CENTERLINE ELEVATION OF 115'-0" A.G.L. ON A PROPOSED 120' PROPOSED STEEL MONOPOLE TOWER LOCATED AT THE CENTER OF THE PROPOSED COMPOUND.
3. PROPOSED CELCO PARTNERSHIP EQUIPMENT CABINETS AND DIESEL FUELED BACK-UP POWER GENERATOR WITH ICE-BRIDGE CANOPY OVER THE PROPOSED EQUIPMENT ON A PROPOSED 10'x20' CONCRETE PAD LOCATED WITHIN THE COMPOUND.
4. SITE ACCESS WILL BE VIA A PROPOSED 12' WIDE GRAVEL DRIVE WITHIN A PROPOSED 20' WIDE ACCESS/UTILITY EASEMENT STARTING OFF CHAMBERLAIN ROAD.
5. POWER AND TELCO UTILITIES SHALL BE ROUTED UNDERGROUND FROM EXISTING RESPECTIVE DEMARCS ON OR ADJACENT TO THE SUBJECT PROPERTY TO THE PROPOSED UTILITY BACKBOARD LOCATED WITHIN THE PROPOSED FENCED COMPOUND.
6. FINAL UTILITY DEMARC LOCATIONS AND UTILITY ROUTING WILL BE VERIFIED/DETERMINED BY LOCAL UTILITY COMPANIES. UTILITIES WILL BE ROUTED FROM UTILITY BACKBOARD TO THE PROPOSED WIRELESS EQUIPMENT.
7. FINAL DESIGN FOR TOWER AND ANTENNA MOUNTS SHALL BE INCLUDED IN THE D&M PLAN.
8. THE PROPOSED WIRELESS FACILITY INSTALLATION WILL BE DESIGNED IN ACCORDANCE WITH THE 2021 INTERNATIONAL BUILDING CODE AS MODIFIED BY THE 2022 CONNECTICUT STATE BUILDING CODE AND AMENDMENTS.
9. THERE WILL NOT BE ANY LIGHTING UNLESS REQUIRED BY THE FCC OR THE FAA.
10. THERE WILL NOT BE ANY SIGNS OR ADVERTISING ON THE ANTENNAS OR EQUIPMENT.
11. FOR ADDITIONAL NOTES AND DETAILS REFER TO THE ACCOMPANYING DRAWINGS.



PROJECT SUMMARY

SITE NAME:	BROADBROOK RELO CT
SITE ADDRESS:	11 CHAMBERLAIN RD EAST WINDSOR, CT 06016
PROPERTY OWNER:	CROP PRODUCTION SERVICES INC 3005 ROCKY MOUNTAIN AVE LOVELAND, CO 80538
CELCO PARTNERSHIP/TENANT:	CELCO PARTNERSHIP d.b.a. VERIZON WIRELESS 20 ALEXANDER DRIVE WALLINGFORD, CT 06402
VERIZON SITE ACQUISITION CONTACT:	CHUCK BURTTOMESSO SITE ACQUISITION AND BUSINESS DEVELOPMENT AROSMITH DEVELOPMENT 318 WEST AVENUE SARATOGA SPRINGS, NY 12066 (800) 306-8355 CELL
LEGAL/REGULATORY COUNSEL:	KENNETH C. BALDWIN, ESQ. ROBINSON & COLE (860) 275-8345
PROPOSED TOWER COORDINATES (PRELIMINARY):	LATITUDE 41°-53'-58.01" N LONGITUDE 72°-33'-3.97" W GROUND ELEVATION: 177'± A.M.S.L. COORDINATES AND GROUND ELEVATION REFERENCED FROM CLASS D SURVEY PREPARED BY CENTEK ENGINEERING DATED 04/08/2023

SHEET INDEX

SHT. NO.	DESCRIPTION	REV. NO.
T-1	TITLE SHEET	A
C-1	AERIAL OVERLAY PLAN AND MUNICIPALITY MAP	A
C-2	PARTIAL COMPOUND PLAN AND ELEVATION	A

PROFESSIONAL ENGINEER SEAL

CENTEK engineering
2031 4th Street
2031 4th Street
857 North Highland Road
Hartford, CT 06105
www.CentekEng.com

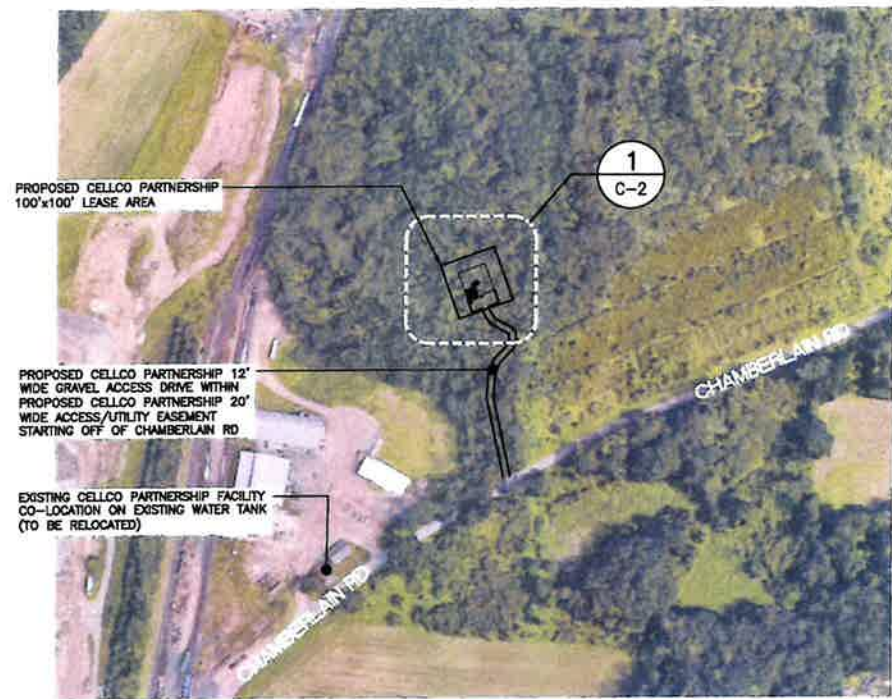
Cellco Partnership d/b/a Verizon Wireless
WIRELESS COMMUNICATIONS FACILITY
BROADBROOK RELO CT
11 CHAMBERLAIN RD
EAST WINDSOR, CT 06016

DATE: 04/14/2023
SCALE: AS NOTED
JOB NO. 22017.11

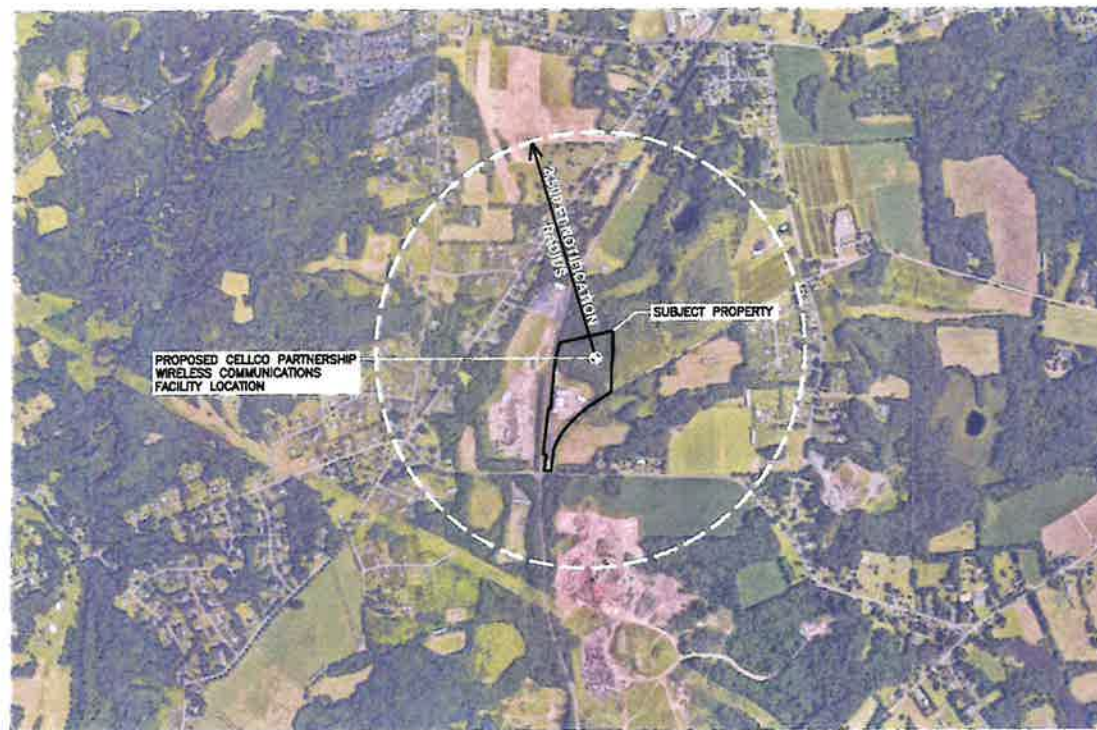
TITLE SHEET

T-1
Sheet No. 1 of 2

REV.	DATE	BY	CHK'D BY	DESCRIPTION
A	04/14/23	RIS	TJR	CT SITING COUNCIL TECH REPORT DRAWINGS - CLIENT REVIEW



1
C-1
AERIAL OVERLAY PLAN
SCALE: 1" = 150'
NORTH



2
C-1
MUNICIPALITY NOTIFICATION LIMIT MAP
SCALE: 1" = 1000'
NORTH

REV.	DATE	DRAWN BY	CHECK'D BY	DESCRIPTION
A	04/14/23	RIS	TJR	CT SITING COUNCIL TECH REPORT DRAWINGS - CLIENT REVIEW

PROFESSIONAL ENGINEER SEAL



CENTEK engineering
Central Valley, LLC, Inc.
2005 ASB SQ
PO Box 488087
837 North Branford Road
Branford, CT 06405
www.CentekEng.com

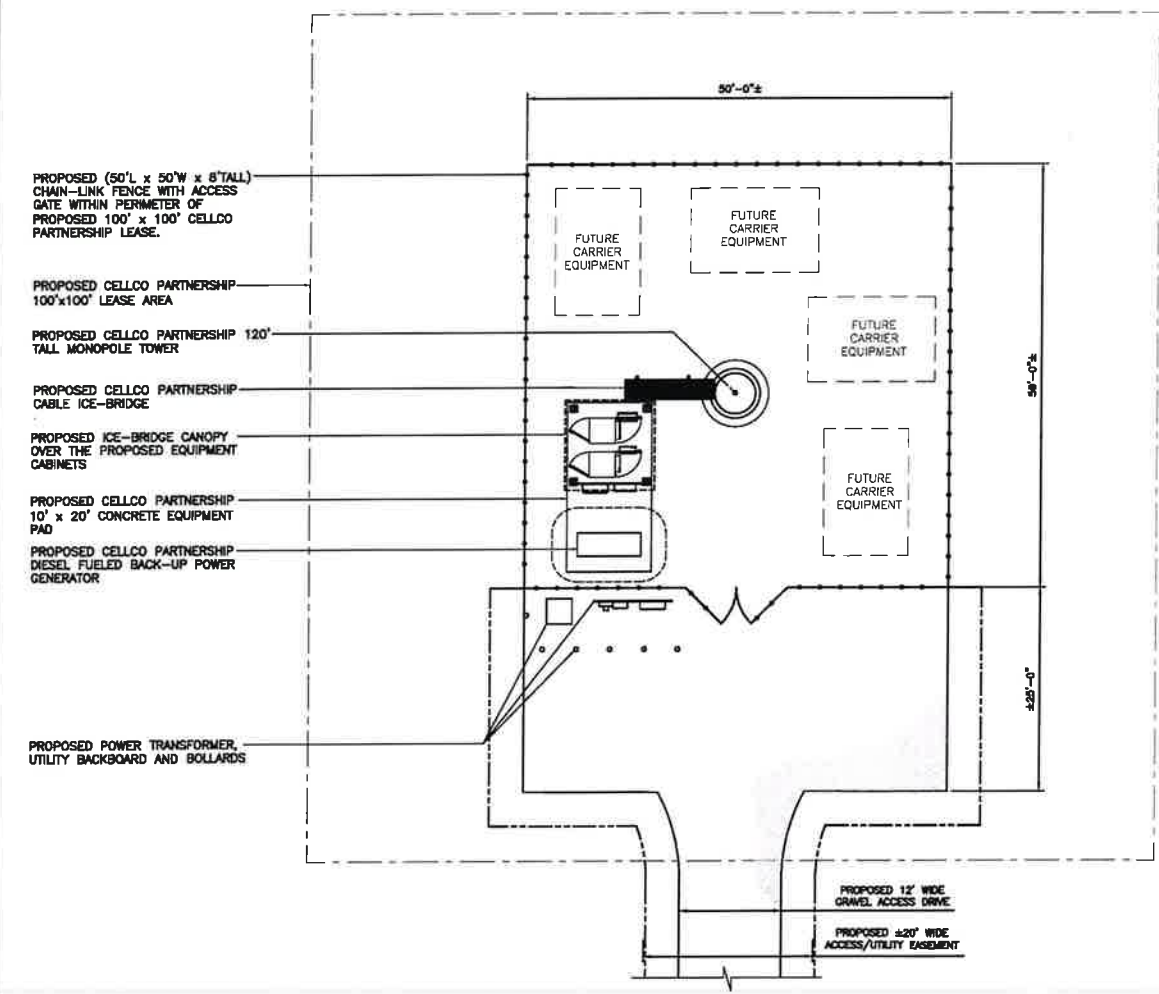
Celco Partnership d/b/a Verizon Wireless
WIRELESS COMMUNICATIONS FACILITY
BROADBROOK RELO CT
11 CHAMBERLAIN RD
EAST WINDSOR, CT 06016

DATE: 04/14/2023
SCALE: AS NOTED
JOB NO. 22017.11

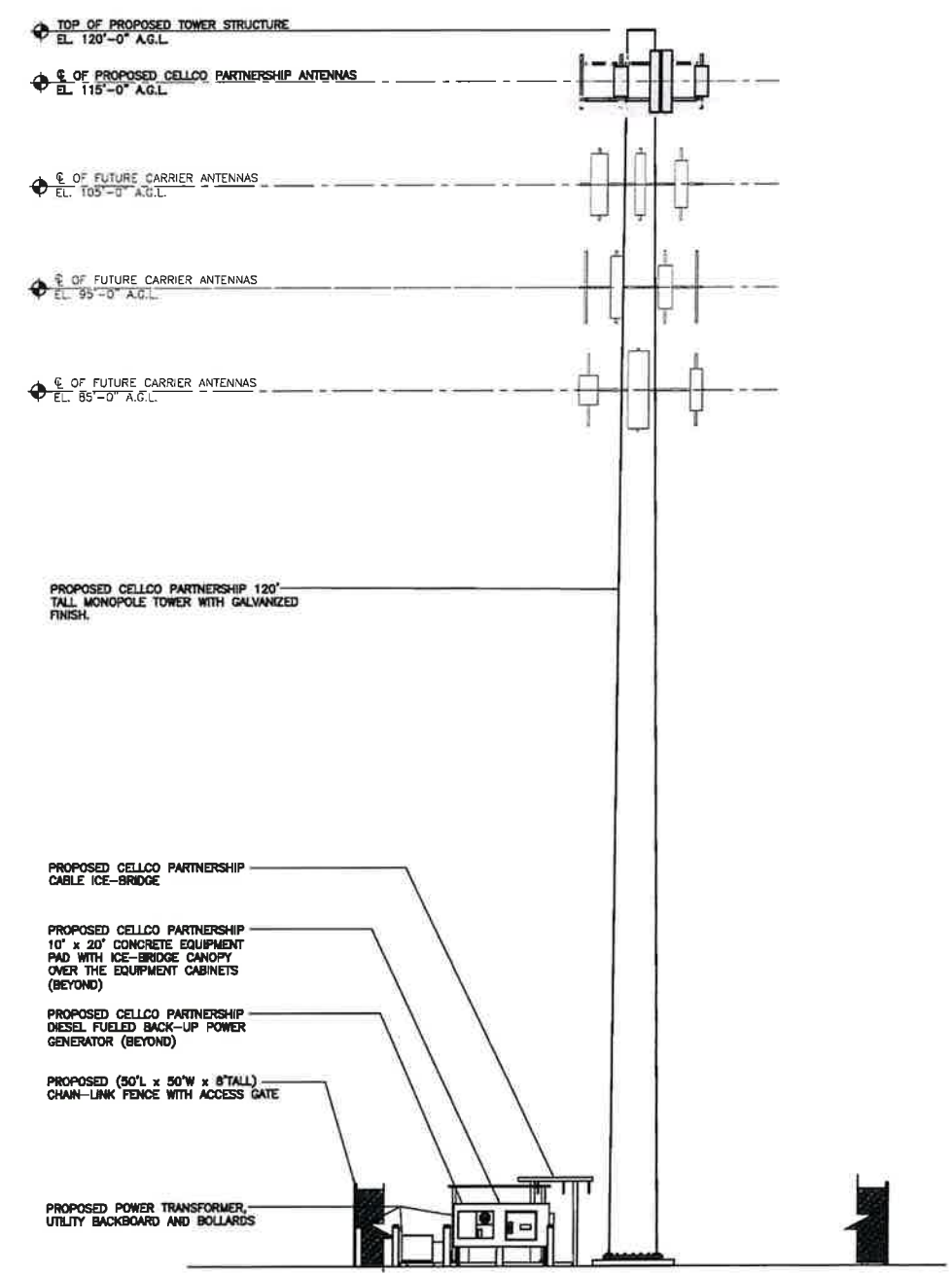
AERIAL OVERLAY PLAN AND MUNICIPALITY MAP

C-1
Sheet No. 2 of 3

NOTE
 THE PROPOSED CELCO PARTNERSHIP ANTENNA INSTALLATION TO CONSIST OF A TOTAL OF (9) PANEL ANTENNAS, ASSOCIATED APPURTENANCES & CABLING.



1 PARTIAL SITE/COMPOUND PLAN
 C-2 SCALE: 1" = 10' NORTH



2 SOUTHEAST FACILITY ELEVATION
 C-2 SCALE: 1" = 8'

PROFESSIONAL ENGINEER SEAL	
verizon	
CENTEK engineering <small>2001 Ash Street 407 North Main Road Bristol, CT 06015 www.CentekEng.com</small>	
Celco Partnership d/b/a Verizon Wireless <small>WIRELESS COMMUNICATIONS FACILITY</small> BROADBROOK RELO CT 11 CHAMBERLAIN RD EAST WINDSOR, CT 06016	
DATE:	04/14/2023
SCALE:	AS NOTED
JOB NO.	22017.11
PARTIAL COMPOUND PLAN AND ELEVATION	
C-2	
Sheet No. 3 of 3	

ATTACHMENT 4



PRELIMINARY VISUAL ASSESSMENT

Date: May 23, 2023

To: Verizon Wireless
20 Alexander Drive
Wallingford, CT 06492

From: Brian Gaudet, Project Manager

Re: Proposed Telecommunications Facility
11 Chamberlain Road
East Windsor, Connecticut

Cellco Partnership, d/b/a Verizon Wireless ("Verizon Wireless") has identified a proposed location for development of a wireless telecommunications facility (the "Facility") at 11 Chamberlain Road in the Broad Brook section of the Town of East Windsor, Connecticut (the "Host Property"). The proposed Facility would include a 120-foot-tall steel monopole and associated ground equipment located in a fenced compound.

The Host Property is a ±10.9-acre commercial parcel developed with numerous buildings and a water tank that currently hosts multiple wireless service providers. The Facility would be located within an approximately 50-foot by 50-foot fenced gravel compound located in the northeastern portion of the Host Property (the "Site"). Land use in the immediate vicinity consists primarily of a mix of residential development and agricultural fields.

At the request of Verizon Wireless, All-Points Technology Corporation, P.C. ("APT") has prepared initial viewshed maps to evaluate the extent of visibility associated with the proposed Facility. To conduct this preliminary assessment, a predictive computer model was developed specifically for this project using ESRI's ArcMap Geographic Information System ("GIS")¹ software and available GIS data. The predictive model provides an initial estimate of potential visibility throughout a pre-defined Study Area, in this case a two-mile radius surrounding the proposed Facility location. The predictive model incorporates Project and Study Area-specific data, including the Facility location, its ground elevation and the proposed Facility height, as well as the surrounding topography, existing vegetation, and structures (the primary features that can block direct lines of sight). The Study Area covers the Town of East Windsor and a small portion of the neighboring municipality of Ellington (to the east).

¹ ArcMap is a Geographic Information System desktop application developed by the Environmental Systems Research Institute for creating maps, performing spatial analysis, and managing geographic data.

A digital surface model ("DSM"), capturing both the natural and built features on the Earth's surface, was generated for the extent of the Study Area utilizing State of Connecticut 2016 LiDAR² LAS³ data points. LiDAR is a remote-sensing technology that develops elevation data by measuring the time it takes for laser light to return from the surface to the instrument's sensors. The varying reflectivity of objects also means that the "returns" can be classified based on the characteristics of the reflected light, normally into categories such as "bare earth," "vegetation," "road," or "building". Derived from the 2016 LiDAR data, the LAS datasets contain the corresponding elevation point data and return classification values. The Study Area DSM incorporates the first return LAS dataset values that are associated with the highest feature in the landscape, typically a treetop, top of a building, and/or the highest point of other tall structures.

Once the DSM was generated, ESRI's Viewshed Tool was utilized to identify locations within the Study Area where the proposed Facility may be visible. ESRI's Viewshed Tool predicts visibility by identifying those cells⁴ within the DSM that can be seen from an observer location. Cells where visibility was indicated were extracted and converted from a raster dataset to a polygon feature which was then overlaid onto an aerial photograph and topographic base map. Since the DSM includes the highest relative feature in the landscape, isolated "visible" cells are often indicated within heavily forested areas (e.g., from the top of the highest tree) or on building rooftops during the initial processing. It is recognized that these areas do not represent typical viewer locations and overstate visibility. As such, the resulting polygon feature is further refined by extracting those areas.

The results of the preliminary analysis are intended to provide a representation of those areas where portions of the Facility may potentially be visible to the human eye without the aid of magnification, based on a viewer eye-height of five (5) feet above the ground and the combination of intervening topography, trees and other vegetation, and structures. However, the Facility may not necessarily be visible from all locations within those areas identified by the predictive model, which has limitations. For instance, it is important to note that the computer model cannot account for mass density, tree diameters and branching variability of trees, or the degradation of views that occurs with distance. As a result, some areas depicted on the viewshed maps as theoretically offering potential visibility of the Facility may be over-predicted because the quality of those views is not sufficient for the human eye to recognize the Facility or discriminate it from other surrounding or intervening objects.

Preliminary viewshed mapping results indicate that predicted year-round visibility associated with the proposed Facility could include up to approximately 78 acres, primarily from locations within approximately 1 mile of the Site. Predicted seasonal visibility, when leaves are off the deciduous trees, could include up to an additional 276 acres. All predicted seasonal visibility occurs within ± 1 mile of the Site.

Collectively, year-round and seasonal visibility is predicted to occur over a relatively small portion of the 8,042-acre Study Area ($\pm 3.16\%$). The initial results presented herein will be verified via a field-test to supplement and fine tune the results of the preliminary computer modeling. The in-field activities will consist of raising a brightly-colored, approximately four-foot diameter, helium-filled balloon to the proposed monopole height of 120 feet at the Site. Once the balloon is raised into position, APT performs a Study Area reconnaissance by driving publicly accessible local and State roads and inventorying those locations where the balloon can be seen above/through the trees. Visual observations from publicly accessible locations will be used to evaluate

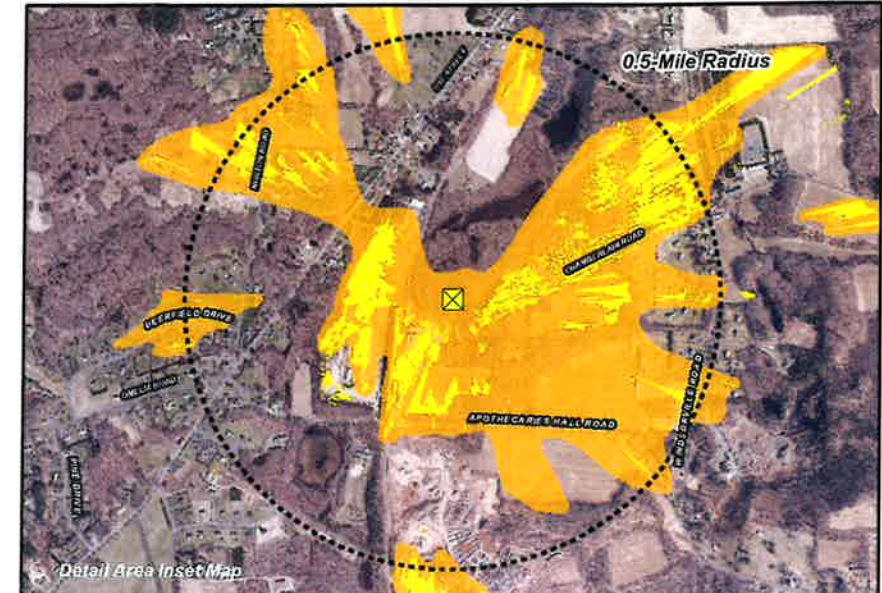
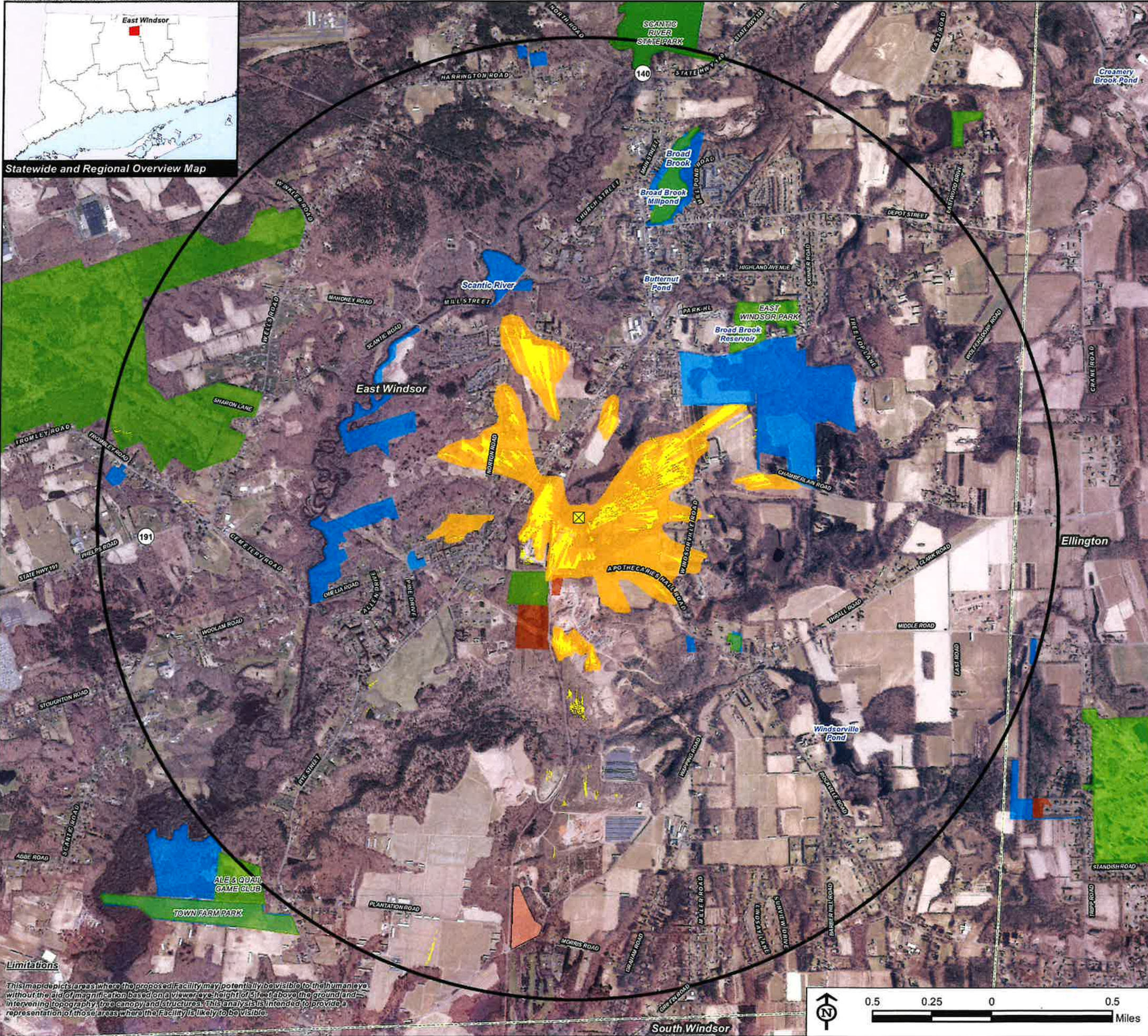
² Light Detection and Ranging

³ An LAS file is an industry-standard binary format for storing airborne LiDAR data.

⁴ Each DSM cell size is 1 square meter.

the results of the preliminary viewshed mapping and identify any discrepancies in the initial modeling. APT also photo-documents areas where the balloon can be seen (as well as locations where it is not visible) and will prepare photographic simulations from several vantage points to depict scaled renderings of the proposed Facility. This information will be included in Verizon Wireless's application to the Connecticut Siting Council for a Certificate of Environmental Compatibility and Public Need, a copy of which will be provided to the Town of East Windsor.

ATTACHMENTS



Preliminary Viewshed Analysis Map

Proposed Wireless Telecommunications Facility
 Broadbrook RELO CT
 11 Chamberlain Road
 East Windsor, Connecticut

Proposed facility height is 120 feet AGL.
 Forest canopy height is derived from LIDAR data.
 Study area encompasses a two-mile radius and includes 8,042 acres.
 Information provided on this map has not been field verified
 Base Map Source: 2019 Aerial Photograph (CTECO)
 Map Date: May 2023

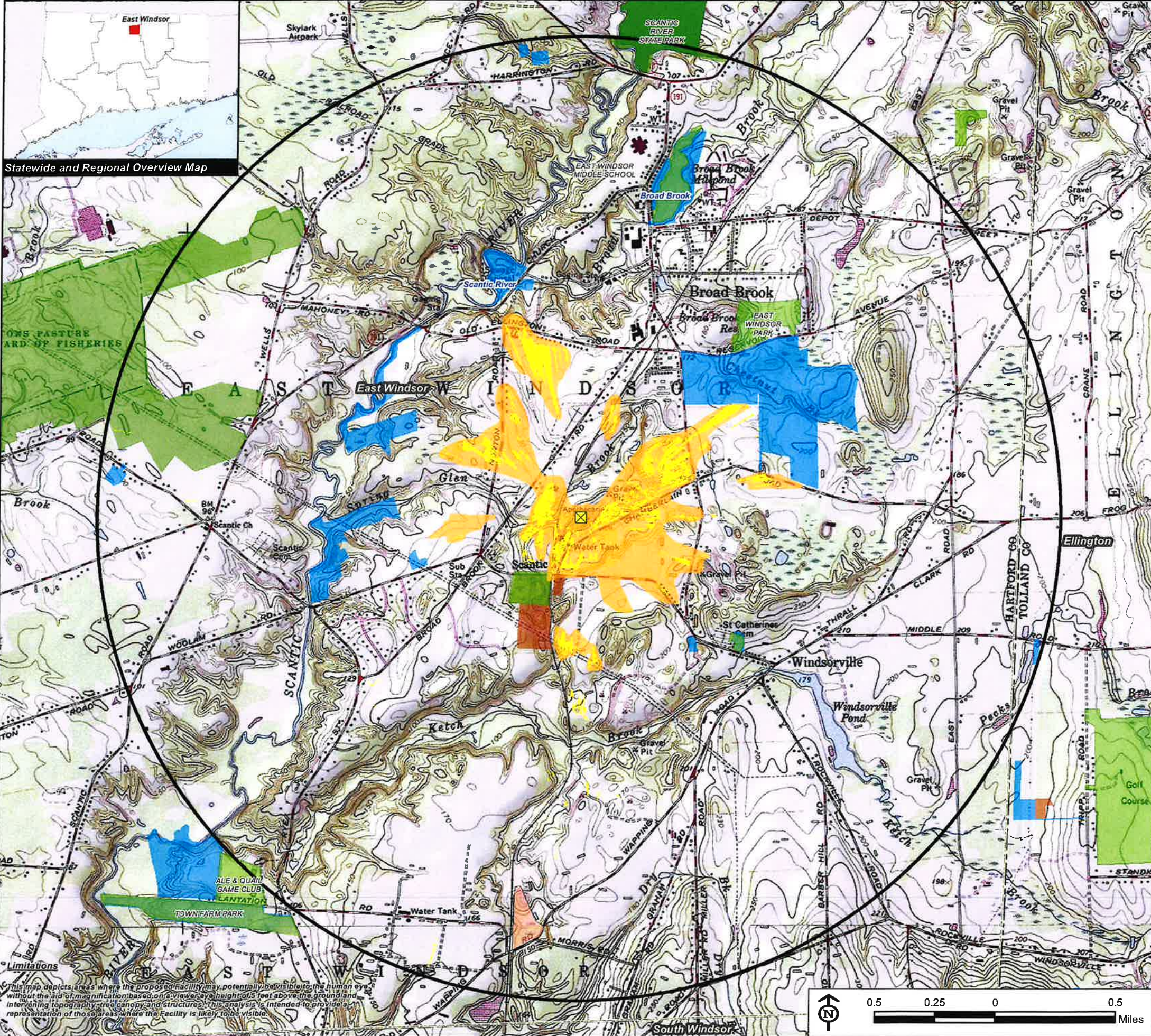
- Legend**
- Proposed Site
 - Study Area (2-Mile Radius)
 - Predicted Year-Round Visibility (78 Acres)
 - Areas of Potential Seasonal Visibility (276 Acres)
 - Municipal Boundary
 - Trail
 - Scenic Highway
 - DEEP Boat Launches
 - Municipal and Private Open Space Property
 - State Forest/Park
 - Protected Open Space Property**
 - Federal
 - Land Trust
 - Municipal
 - Private
 - State

Data Sources:
Physical Geography / Background Data
 A digital surface model (DSM) was created from the State of Connecticut 2016 LIDAR LAS data points. The DSM captures the natural and built features on the Earth's surface.
 Municipal Open Space, State Recreation Areas, Trails, County Recreation Areas, and Town Boundary data obtained from CT DEEP.
 Scenic Roads: CTDOT State Scenic Highways (2015); Municipal Scenic Roads (compiled by APT)
Dedicated Open Space & Recreation Areas
 Connecticut Department of Energy and Environmental Protection (DEEP): DEEP Property (May 2007; Federal Open Space (1997); Municipal and Private Open Space (1997); DEEP Boat Launches (1994)
 Connecticut Forest & Parks Association, Connecticut Walk Books East & West
Other
 CTDOT Scenic Strips (based on Department of Transportation data)

Notes
 **Not all the sources listed above appear on the Viewshed Maps. Only those features within the scale of the graphic are shown.

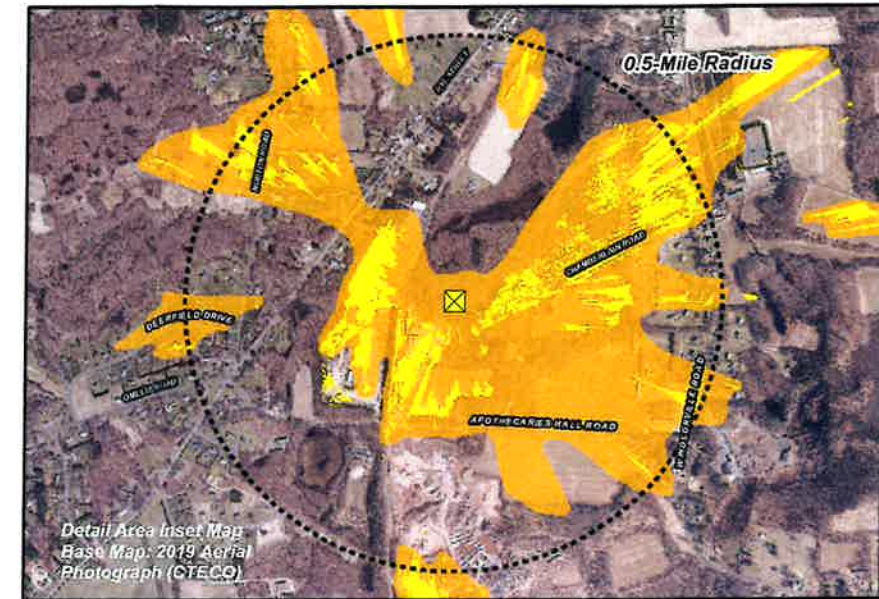
Limitations
 This map depicts areas where the proposed Facility may potentially be visible to the human eye without the aid of magnification based on a viewer eye height of 5 feet above the ground and intervening topography, tree canopy and structures. This analysis is intended to provide a representation of those areas where the Facility is likely to be visible.





Statewide and Regional Overview Map

Limitations
 This map depicts areas where the proposed facility may potentially be visible to the human eye without the aid of magnification based on a viewer's eye height of 5 feet above the ground and intervening topography, tree canopy, and structures. This analysis is intended to provide a representation of those areas where the Facility is likely to be visible.



Detail Area Inset Map
 Base Map: 2019 Aerial Photograph (CTECO)

Preliminary Viewshed Analysis Map

Proposed Wireless Telecommunications Facility
 Broadbrook RELO CT
 11 Chamberlain Road
 East Windsor, Connecticut

Proposed facility height is 120 feet AGL.
 Forest canopy height is derived from LIDAR data.
 Study area encompasses a two-mile radius and includes 8,042 acres.
 Information provided on this map has not been field verified.
 Base Map Source: USGS 7.5 Minute Topographic
 Quadrangle Map, Broad Brook, CT (1984) and Manchester, CT (1992)
 Map Date: May 2023

Legend

- Proposed Site
- Study Area (2-Mile Radius)
- Predicted Year-Round Visibility (78 Acres)
- Areas of Potential Seasonal Visibility (276 Acres)
- Municipal Boundary
- Trail
- Scenic Highway
- DEEP Boat Launches
- Municipal and Private Open Space Property
- State Forest/Park
- Protected Open Space Property**
- Federal
- Land Trust
- Municipal
- Private
- State

Data Sources:

Physical Geography / Background Data

A digital surface model (DSM) was created from the State of Connecticut 2016 LIDAR LAS data points. The DSM captures the natural and built features on the Earth's surface.

Municipal Open Space, State Recreation Areas, Trails, County Recreation Areas, and Town Boundary data obtained from CT DEEP. Scenic Roads: CTDOT State Scenic Highways (2015); Municipal Scenic Roads (compiled by APT)

Dedicated Open Space & Recreation Areas

Connecticut Department of Energy and Environmental Protection (DEEP): DEEP Property (May 2007; Federal Open Space (1997); Municipal and Private Open Space (1997); DEEP Boat Launches (1994)

Connecticut Forest & Parks Association, Connecticut Walk Books East & West

Other

CTDOT Scenic Strips (based on Department of Transportation data)

Notes

**Not all the sources listed above appear on the Viewshed Maps. Only those features within the scale of the graphic are shown.

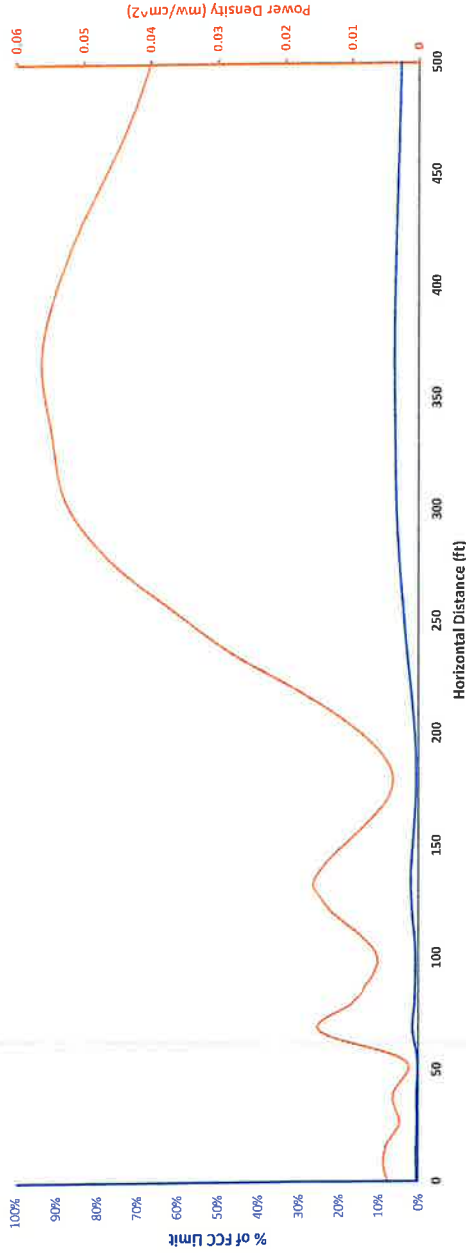


ATTACHMENT 5

Location		Broadbrook RELO CT				
Date		5/8/2023				
Band	C-Band	CBRS	AWS	PCS	850	700
Operating Frequency (MHz)	3,700	3,550	2,145	1,970	880	746
General Population MPE (mW/cm ²)	1	1	1	1	0.56666667	0.49733333
ERP Per Transmitter (Watts)	13,335	50	1,525	1,397	715	661
Number of Transmitters	2	4	4	4	4	4
Antenna Centerline (feet)	115	115	115	115	115	115
Total ERP (Watts)	26,670	200	6,100	5,588	2,860	2,644
Total ERP (dBm)	74	53	68	67	65	64
Minimum Net General Population MPE						

RF Exposure 6ft Above Ground Level Far Field Formula (per FCC OET65)

— Total % General Pop MPE
— Total Pwr Density (mW/cm²)



Angle Below Horizon	C-Band	CBRS	AWS	PCS	850-LTE	700 MHz	Power Density (mW/cm ²)	Total % General Pop MPE	Total Pwr Density (mW/cm ²)	Distance	Total % General Pop MPE
90	0.003990376	4.65917E-07	2.6008E-05	3.96504E-05	0.00058929	4.20003E-05	0.0000	0.00%	0.00%	0	0.004657507
89	0.00399002	5.91537E-07	2.37838E-05	3.22262E-05	0.000612799	3.57449E-05	0.0000	0.00%	0.00%	1.029848831	0.00465166
88	0.004081966	5.91579E-07	2.5478E-05	2.61874E-05	0.000668388	2.97233E-05	0.0000	0.00%	0.00%	2.0603254	0.004851233
87	0.0041368	5.14839E-07	2.92396E-05	2.1772E-05	0.000753369	2.52875E-05	0.0000	0.00%	0.00%	3.092058978	0.00496982
86	0.004230504	4.08695E-07	3.595E-05	1.65054E-05	0.000806743	2.10195E-05	0.0000	0.00%	0.00%	4.125681905	0.005111131
85	0.004227085	3.31931E-07	4.22034E-05	1.16755E-05	0.000840481	1.74695E-05	0.0000	0.00%	0.00%	5.161831148	0.005142846
84	0.00431261	2.441E-07	4.41488E-05	1.40231E-05	0.000881948	1.48542E-05	0.0000	0.00%	0.00%	6.201149881	0.0052757387
83	0.004316182	2.34481E-07	4.11535E-05	1.84643E-05	0.000881948	1.35313E-05	0.0000	0.00%	0.00%	7.244289093	0.0052757387
82	0.004310303	2.68853E-07	4.01619E-05	2.06891E-05	0.000880746	1.32052E-05	0.0000	0.00%	0.00%	8.291909247	0.0052757387
81	0.004303616	1.81485E-07	7.4669E-05	2.0657E-05	0.00087938	1.44568E-05	0.0000	0.00%	0.00%	9.344681979	0.0052757387
80	0.004198321	1.6528E-07	0.000118136	2.11013E-05	0.000898294	1.73506E-05	0.0000	0.00%	0.00%	10.40325186	0.0052757387
79	0.004094799	4.23877E-07	0.000155432	2.7765E-05	0.000958605	2.08195E-05	0.0000	0.00%	0.00%	11.46843824	0.0052757387
78	0.003902138	8.8371E-07	0.000190814	3.73711E-05	0.001003797	2.4977E-05	0.0000	0.00%	0.00%	12.54083714	0.005159981
77	0.003633157	1.27436E-06	0.000223661	4.48247E-05	0.001098063	2.99587E-05	0.0000	0.00%	0.00%	13.6212328	0.005030939
76	0.003460788	1.33101E-06	0.000262109	4.9024E-05	0.001173594	3.43094E-05	0.0000	0.00%	0.00%	14.71035217	0.004981156
75	0.003220868	2.77319E-06	0.0003071	5.74389E-05	0.001283264	3.92836E-05	0.0000	0.00%	0.00%	15.80900235	0.004910728
74	0.002928705	5.77674E-06	0.000335724	6.72836E-05	0.00137094	4.39455E-05	0.0000	0.00%	0.00%	16.91797776	0.004752975
73	0.002601838	9.33872E-06	0.000366933	7.70041E-05	0.001430946	5.02943E-05	0.0000	0.00%	0.00%	18.03811021	0.004536554

72	0.002206907	1.28467E-05	0.0003823905	8.22276E-05	0.001493231	5.62327E-05	0.00%	0.00%	0.22%	0.00%	0.04%	0.01%	0.25%	0.00%	0.01%	0.01%	19.17062608	0.004234354	0.53%
71	0.001850051	1.57467E-05	0.000399476	9.98291E-05	0.000523993	6.28669E-05	0.00%	0.00%	0.18%	0.00%	0.04%	0.01%	0.26%	0.00%	0.01%	0.01%	20.31532918	0.003940363	0.51%
70	0.00156847	1.94282E-05	0.0003880651	9.81092E-05	0.001516439	7.18977E-05	0.00%	0.00%	0.16%	0.00%	0.04%	0.01%	0.26%	0.00%	0.01%	0.01%	21.47424382	0.003662175	0.48%
69	0.002299145	2.05904E-05	0.00035154	0.00014787	0.001510083	8.41194E-05	0.00%	0.00%	0.13%	0.00%	0.04%	0.01%	0.25%	0.00%	0.02%	0.02%	22.64797807	0.003381879	0.45%
68	0.001075782	2.1465E-05	0.000902218	0.000137951	0.003469154	0.000100685	0.00%	0.00%	0.11%	0.00%	0.03%	0.03%	0.24%	0.00%	0.02%	0.02%	23.83754732	0.003110695	0.42%
67	0.00092613	2.08775E-05	0.00027958	0.000160559	0.000123285	0.000123285	0.00%	0.00%	0.09%	0.00%	0.03%	0.03%	0.22%	0.00%	0.03%	0.03%	25.04401416	0.002905326	0.40%
66	0.000942966	1.98482E-05	0.000280311	0.000187815	0.000167182	0.000150916	0.00%	0.00%	0.09%	0.00%	0.03%	0.03%	0.22%	0.00%	0.03%	0.03%	26.26849243	0.002851726	0.39%
65	0.001052425	1.98482E-05	0.000280311	0.000187815	0.000167182	0.000150916	0.00%	0.00%	0.13%	0.00%	0.03%	0.03%	0.22%	0.00%	0.05%	0.05%	27.51515183	0.002903038	0.39%
64	0.001201581	1.96228E-05	0.000273565	0.000233876	0.000956526	0.000225939	0.00%	0.00%	0.12%	0.00%	0.03%	0.03%	0.22%	0.00%	0.07%	0.07%	28.77622273	0.002950211	0.39%
63	0.0005100291	2.18868E-05	0.000248017	0.000254923	0.000862022	0.000276321	0.00%	0.00%	0.15%	0.00%	0.02%	0.02%	0.15%	0.00%	0.05%	0.05%	30.06200152	0.003163462	0.41%
62	0.001834225	2.33055E-05	0.000203333	0.000233333	0.000233333	0.000233333	0.00%	0.00%	0.18%	0.00%	0.02%	0.02%	0.11%	0.00%	0.07%	0.07%	31.37085647	0.003375112	0.42%
61	0.000292079	2.31518E-05	0.000158083	0.000229515	0.000050843	0.000394291	0.00%	0.00%	0.23%	0.00%	0.02%	0.02%	0.09%	0.00%	0.09%	0.09%	34.05366588	0.003626953	0.44%
60	0.002336387	2.09678E-05	0.00013724	0.000185259	0.000521106	0.000449555	0.00%	0.00%	0.23%	0.00%	0.02%	0.02%	0.09%	0.00%	0.09%	0.09%	34.05366588	0.003626953	0.44%
59	0.002626843	1.73126E-05	7.45652E-05	0.000136326	0.00040239	0.00051237	0.00%	0.00%	0.27%	0.00%	0.01%	0.01%	0.08%	0.00%	0.10%	0.10%	35.45077652	0.003843576	0.47%
58	0.002766766	1.3963E-05	5.4863E-05	0.000371805	0.000570441	0.000570441	0.00%	0.00%	0.28%	0.00%	0.01%	0.01%	0.08%	0.00%	0.11%	0.11%	36.86729176	0.003863189	0.47%
57	0.002797895	9.8048E-06	6.8605E-05	5.72335E-05	0.000313877	0.000606255	0.00%	0.00%	0.27%	0.00%	0.01%	0.01%	0.05%	0.00%	0.04%	0.04%	38.3150488	0.00379357	0.46%
56	0.00274373	7.2057E-06	5.52047E-05	7.14337E-05	0.000258829	0.000644633	0.00%	0.00%	0.27%	0.00%	0.01%	0.01%	0.05%	0.00%	0.04%	0.04%	39.79600249	0.003751078	0.46%
55	0.002453132	1.20592E-05	4.8796E-05	0.000213336	0.000257863	0.000644633	0.00%	0.00%	0.29%	0.00%	0.02%	0.02%	0.04%	0.00%	0.06%	0.06%	41.31224475	0.003458777	0.49%
54	0.002130887	1.9539E-05	2.15708E-05	7.86672E-05	0.00017153	0.000644843	0.00%	0.00%	0.21%	0.00%	0.03%	0.03%	0.03%	0.00%	0.03%	0.03%	42.86600915	0.003060674	0.38%
53	0.001754595	2.22591E-05	0.000125743	7.26792E-05	0.000138204	0.000611526	0.00%	0.00%	0.18%	0.00%	0.03%	0.03%	0.02%	0.00%	0.12%	0.12%	44.45568896	0.002710973	0.34%
52	0.001304842	3.98625E-06	0.000212141	6.5583E-05	0.000111448	0.000577825	0.00%	0.00%	0.13%	0.00%	0.02%	0.02%	0.02%	0.00%	0.12%	0.12%	46.09585196	0.002284625	0.29%
51	0.00089267	7.00968E-06	0.000316226	6.3376E-05	9.14185E-05	0.000571111	0.00%	0.00%	0.09%	0.00%	0.03%	0.03%	0.02%	0.00%	0.10%	0.10%	47.77725796	0.001891811	0.25%
50	0.000531572	9.78519E-06	0.000393431	9.70953E-05	8.23958E-05	0.00048639	0.00%	0.00%	0.05%	0.00%	0.04%	0.04%	0.01%	0.00%	0.09%	0.09%	49.50687824	0.001562729	0.21%
49	0.00093125	1.10959E-05	0.000262052	0.000257863	0.000354397	0.000224651	0.00%	0.00%	0.03%	0.00%	0.04%	0.04%	0.03%	0.00%	0.08%	0.08%	51.28791753	0.001482832	0.19%
48	0.00030111	1.37868E-05	0.000383498	0.000684999	8.21864E-05	0.000304719	0.00%	0.00%	0.05%	0.00%	0.03%	0.03%	0.01%	0.00%	0.05%	0.05%	55.01839008	0.002581952	0.29%
47	0.000466055	1.92067E-05	0.000267765	0.001512447	8.4877E-05	0.000231572	0.00%	0.00%	0.05%	0.00%	0.03%	0.03%	0.01%	0.00%	0.02%	0.02%	56.97563771	0.004123945	0.43%
46	0.000826243	2.32871E-05	0.0001665	0.002840148	8.36471E-05	0.00017312	0.00%	0.00%	0.08%	0.00%	0.02%	0.02%	0.03%	0.00%	0.03%	0.03%	59	0.009586625	0.66%
45	0.001350265	2.14006E-05	0.000278436	0.000435785	7.68709E-05	0.000129497	0.00%	0.00%	0.14%	0.00%	0.03%	0.03%	0.01%	0.00%	0.02%	0.02%	61.09629851	0.009590885	0.92%
44	0.002404929	1.63493E-05	0.000405197	0.000645049	8.21482E-05	0.00048639	0.00%	0.00%	0.20%	0.00%	0.05%	0.05%	0.03%	0.00%	0.06%	0.06%	63.26975389	0.011712411	1.18%
43	0.002903989	2.48835E-05	0.000513112	0.008168431	4.8008E-05	5.45398E-05	0.00%	0.00%	0.29%	0.00%	0.05%	0.05%	0.02%	0.00%	0.03%	0.03%	65.56313837	0.013882017	1.40%
42	0.003926732	2.6794E-05	0.000634363	0.009210107	4.60653E-05	3.79551E-05	0.00%	0.00%	0.39%	0.00%	0.06%	0.06%	0.01%	0.00%	0.03%	0.03%	67.87173603	0.01547407	1.52%
41	0.00496261	2.51025E-05	0.000620384	0.009245779	5.95735E-05	3.9585E-05	0.00%	0.00%	0.50%	0.00%	0.09%	0.09%	0.02%	0.00%	0.03%	0.03%	70.31634196	0.015193338	1.53%
40	0.005996699	2.14249E-05	0.00066538	0.008075067	9.46793E-05	4.09403E-05	0.00%	0.00%	0.60%	0.00%	0.10%	0.10%	0.03%	0.00%	0.03%	0.03%	72.85893224	0.014213992	1.44%
39	0.006975985	1.55458E-05	0.001013707	0.005985686	0.000515797	5.92712E-05	0.00%	0.00%	0.70%	0.00%	0.10%	0.10%	0.02%	0.00%	0.02%	0.02%	75.51655663	0.012558887	1.28%
38	0.007722454	1.15282E-05	0.000883206	0.003614005	0.000232862	9.18319E-05	0.00%	0.00%	0.77%	0.00%	0.09%	0.09%	0.05%	0.00%	0.06%	0.06%	78.29564448	0.010610988	1.10%
37	0.007894489	1.05394E-05	0.000649806	0.001576004	0.000232862	0.00048639	0.00%	0.00%	0.79%	0.00%	0.07%	0.07%	0.05%	0.00%	0.05%	0.05%	81.20653331	0.009547248	1.00%
36	0.008114666	1.02395E-05	0.000518236	0.000493957	0.000354397	0.000224651	0.00%	0.00%	0.81%	0.00%	0.05%	0.05%	0.05%	0.00%	0.03%	0.03%	84.26079324	0.008542169	0.91%
35	0.007491188	1.171E-05	0.000340181	2.53971E-05	0.000334113	0.00033868	0.00%	0.00%	0.75%	0.00%	0.02%	0.02%	0.05%	0.00%	0.02%	0.02%	87.47109174	0.008045333	0.88%
34	0.006940424	1.5708E-05	0.000182147	0.000155772	0.000289374	0.000498143	0.00%	0.00%	0.69%	0.00%	0.01%	0.01%	0.04%	0.00%	0.04%	0.04%	90.85203287	0.007138079	0.80%
33	0.00568793	3.06632E-05	7.8926E-05	0.000416051	0.000217476	0.000174746	0.00%	0.00%	0.57%	0.00%	0.02%	0.02%	0.05%	0.00%	0.02%	0.02%	94.41973721	0.00657566	0.77%
32	0.004796067	3.22768E-05	0.000176886	0.000147782	0.000479317	0.002982814	0.00%	0.00%	0.48%	0.00%	0.02%	0.02%	0.04%	0.00%	0.03%	0.03%	98.19248946	0.006162617	0.75%
31	0.003980786	4.11177E-05	0.000455277	0.000339002	7.33289E-05	0.001214111	0.00%	0.00%	0.40%	0.00%	0.05%	0.05%	0.01%	0.00%	0.02%	0.02%	102.1909976	0.006463434	0.81%
30	0.0038791	4.65995E-05	0.000695667	0.000220967	4.2997E-05	0.001619322	0.00%	0.00%	0.38%	0.00%	0.07%	0.07%	0.01%	0.00%	0.02%	0.02%	106.4388176	0.007511286	0.96%
29	0.004510314	4.83847E-05	0.000570748	0.000134098	6.40537E-05	0.002006439	0.00%	0.00%	0.49%	0.00%	0.06%	0.06%	0.01%	0.00%	0.03%	0.03%	115.9628615	0.009105626	1.16%
28	0.005823225	3.74258E-05	0.00059906	0.00012006	0.000326811	0.002368111	0.00%	0.00%	0.58%	0.00%	0.06%	0.06%	0.01%	0.00%	0.03%	0.03%	120.9679267	0.013324568	1.47%
27	0.007690079	2.65423E-05	0.000343333	0.000190618	0.000515699	0.002737163	0.00%	0.00%	0.77%	0.00%	0.03%	0.03%	0.02%	0.00%	0.02%	0.02%	126.5259083	0.014786726	1.86%
26	0.00944904	2.10192E-05	0.000176886	0.000147782	0.000479317	0.002982814	0.00%	0.00%	0.94%	0.00%	0.02%	0.02%	0.04%	0.00%	0.06%	0.06%	132.5161697	0.015926522	2.00%
25	0.010433292	1.1009E-05	0.000135687	0.000198452	0.0002559	0.003181704	0.00%	0.00%	1.04%	0.00%	0.02%	0.02%	0.05%	0.00%	0.01%	0.01%	138.9952866	0.014860486	1.90%
24	0.011321563	9.0769E-06	0.000155873	8.01936E-05	0.001130445	0.003298571	0.00%	0.00%	1.13%	0.00%	0.02%	0.02%	0.05%	0.00%	0.02%	0.02%	146.0901244	0.012851754	1.69%
23	0.009970172	1.66997E-05	0.000168859	0.000147549	0.000483985	0.003118466	0.00%	0.00%	1.08%	0.00%	0.02%	0.02%	0.05%	0.00%	0.04%	0.04%	153.7002548	0.009565512	1.38%
22	0.00777415	1.86851E-05	0.000158475	0.000399884	0.001702143	0.002798281	0.00%	0.00%	0.46%	0.00%	0.03%	0.03%	0.03%	0.00%	0.07%	0.07%	162.1011677	0.007044449	1.04%
21	0.004857543	1.6466E-05	0.000302613	0.000746128	0.001870351	0.00244741	0.00%	0.00%	0.46%	0.00%	0.06%	0.06%	0.03%	0.00%	0.03%	0.03%	171.3484418	0.00456232	